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The Business Man's Vade Mecum

IN NINE PARTS

Price, $4.00

The Book-Keeper Publishing Company, Ltd.
DETROIT, MICHIGAN
1903

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THE

Business Man's Vade Mecum

A text book for those who desire to combine
in their work

ACCURACY, EFFICIENCY,
SPEED, SHORT CUTS

In Nine Parts.

E. H. Beach

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PART I.

How to do Without a Trial Balance.

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Popular Checking Systems.

THE following methods are principally intended for the book-keeper who does his work without assistants, or with not more than one junior. They are intended as a help in the way of showing the book-keeper how to obtain complete assurance that his work is correct, in advance of proving it to be correct.

They are published with a view to alleviate and remove the troubles of the Trial Balance by illustrating and describing the various methods devised for the purpose.

They are published to show that any book-keeper can, if he wishes, with very little trouble, prove his work each day and have his balance complete directly the last item for the month has been posted, and are designed to show how the Trial Balance may be absolutely dispensed with except as an ornamental statement.

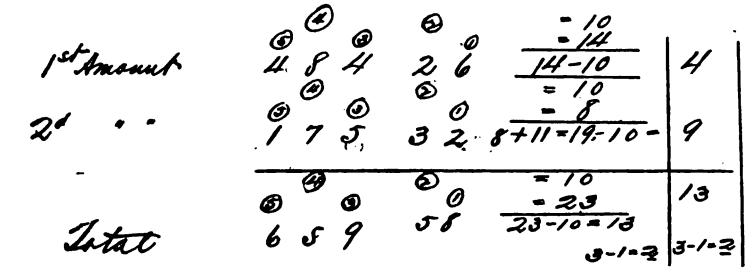
CHAPTER I.

The Check Figure.

This is an effective but laborious check. As a matter of fact, all checks are laborious, and the inventor who will COMBINE THE CHECK WITH THE WORK, so that no extra labor is involved, has yet to be introduced.

We do not present any mathematical explanation of the check figure, because such an explanation is quite unnecessary, the modus operandi being simple and easily understood.

The check figure we illustrate is "eleven." Take two amounts of five figures each. Starting at the right hand, add the first, third and fifth figures and deduct the second and fourth. If the latter exceeds the former, add 11 and then deduct. The result is the proof figure.



This illustration merely shows that the footing is correct, the footing of the check figures giving the same check figure as the footing of the amounts. But if these amounts are posted to the ledger the same operation will prove the accuracy of the posting.

We will suppose that our book-keeper is enlightened and progressive, and desires to prove each day's work as he goes along, so as to be able

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to get his balance promptly without trouble on the first day of the month.

He will post from his sales-book, or ticket, $484.26. As he posts the amount in the ledger he extracts his proof figure "4," and writes it in the sales-book in a column which he arranges for the purpose.

The proof figure of the footing of the sales-book will then prove the accuracy of the postings to the ledger for the day by agreeing with the footing of the column of proof figures in the sales-book which represent the postings of the ledger. The same operation will prove the accuracy of the day's postings from cash book, journal, purchase record, or any other book, so that it is within the reach of every book-keeper with extraordinarily little trouble to prove each day's work as he goes along, and to be free from all bother and trouble of errors when he endeavors to obtain his monthly trial balance.

In order to make this matter perfectly clear, we append an illustration representing one day's work from the cash book and its proof.

The amounts posted to the ledger from the sundries column of the cash received side of the cash book are represented by the check figures in the check column, the footing of which is 29, or 9—2=7. The check figure extracted from the total of the sundries column—$12,578.68—is also "7," thus proving the postings to be correct for the day. The postings

No. 1 Cash Received.

Date	Names	Folio	Check	Sundries	Cash Sales	Factory	Int. & Disct.
July 1	Amounts Ford.		4	12 198 60	117 20	345 28	56 50
	F. E. Brisco.	45	2	193 95			
	C. Churchill	178	7	165 84			
	A. Miller	13	10	6 81			
	A. T. Canfield	96	6	13 48			
			7	12 578 68			

from sales-book, journal, etc., are treated in like manner, each section of the work being thus proved separately and easily.

In entering balances from the ledger into the trial balance book the check figure should be extracted first, and the amount copied from the ledger after. The footing of the check figures will then check the correctness of the amounts in the trial balance book, which have been copied from the ledger, and any errors will be promptly located.

But the check figure, unfortunately, is not infallible. It is, of course, quite possible to make a mistake in extracting it, but the check figure is not proof against all errors, even when correctly extended, as the following example will show:

No. 2. Sales Book.

Date	Names	Folio	Check	Amounts
July 1	A. B. Little & Son	87	9	126 15
	S. F. Brown & Co.	228	4	40 63
	Hammond Mfg. Co.	229	1	45
	J. Sandford	110	10	10
			2	211 88

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The postings are represented by the check figures, the footing of which amounts to "2," which is the check figure of the total of the amounts posted. The postings are therefore supposed to have been correctly made. This is the way, however, in which the postings appear in the ledger:

The check figures are inserted here merely for the purpose of comparison with those in the sales-book.

In such a case, it is evident that the check figure certifies the work as accurate when it is $34.65 out of balance, $45.10 having been posted as $10.45. This is a very simple illustration, but quite good enough for the purpose. In order to get over this difficulty it is now proposed to

Ledger

A.B. Little & Son.

Date		Folio	Debits	Credits
July 1	Mdse. ⑨	122	126 15	

S.F. Brown.

Date		Folio	Debits	Credits
July 1	Mdse. ④	122	40 63	

Hammond Mfg. Co.

Date		Folio	Debits	Credits
July 1	Mdse ①	122	45	

Date		Folio	Debits	Credits
July 1	Mdse ⑩	122	10	

extend the last unit posted, by the side of the check figure, footing these units and comparing with the footing of the same units in the book of original entry from which the postings are made. (See illustration.)

If $45 is posted as 45 cents the figure "5" would be extended to the left of the check figure, the addition of these units would be "13," instead of "8," and the error would be immediately discovered. But if 10 cents is posted as $10.00 or $10.00 is posted as 10 cents, a cipher would be extended to the left of the check figure in each instance; and notwithstanding all the checks, the books would be out of balance $9.90.

Thus, if $45.00 is posted as 45 cents, the footings of the columns of

No. 3. Sales Book.

Date	Names.	Folio	Check	Amounts	
July 1	A B Little & Son	87	5 9	126	15
	S.F Brown & Co.	228	3 4	40	63
	Hammond Mfg. Co.	229	0 1	45	
	J. Sandford.	110	0 10		10
			8 2	211	88

units would discover a disagreement of 5 cents and promptly locate the erroneous posting. But, on the other hand, if $10 should be posted as 10 cents, or $50 as 50 cents, this additional check would be labor lost; and as in 6,000 postings in a week it would require the writing of 6,000 additional figures, and as the writing of 6,000 figures takes a great deal of time (as any book-keeper may prove for himself), we unhesitatingly denounce this additional check as worthless, taking into consideration the extra labor involved.

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The check figure itself we believe to be a great boon to book-keepers, and those who use it with care and intelligence undoubtedly derive solid advantages which they are only too glad to appreciate and acknowledge.

CHAPTER II.

The Slip System, or Reverse Posting and the Check Ledger.

This is a very effective, but also laborious, check. The labor, however, of finding errors in a trial balance is greater, and is the most unsatisfactory labor a book-keeper can possibly have to perform.

The great end in view is to abolish the trial balance as an important factor in accounting. As an ornamental statement to produce to employers it may be all right, and, to that exent, useful; but so far as book-keepers are concerned, progressive accounting leads to the ability to prove the work on the books to be in balance at any moment.

By the Slip System, the books can be balanced every day, and a trial balance can be produced whenever required. It is particularly applicable to the needs of book-keepers for concerns of comparatively small magnitude.

The modus operandi is very simple and is as follows:

Rule a sheet of paper with debit and credit columns for each book from which postings are made. It is best to have separate sheets for debits and for credits. If the books of original entry are merely:

Cash Book, Sales Book,
Journal, Invoice Book,

your "slip" will be ruled as per illustration.

The credit sheet will be ruled similarly.

When posting debits the book-keeper will place the "slip" at his right hand side and will copy his postings from the ledger into the column which represents the book from which he has posted. At the close of the day the book-keeper will foot the columns of his "slips" and compare the footings of each column with the footings of the charges and credits in cash book, journal, sales book and invoice book for the day. If the footings agree he will know that his postings are correct and that his ledger is in balance. If the footings of any particular column do not agree he will check back, find his error, and correct it.

And when he takes his trial balance, if it does not come out exactly right, the book-keeper knows that the error must have occurred in drawing off the balance, and consequently can find the error with facility.

Progressive book-keepers who use columnar cash books and journals

DEBIT SHEET.

CASH	JOURNAL	SALES	PURCHASES

will, of course, provide the same columns on their "slips" as their cash books and journals contain. When a mistake occurs they will thus be able to locate it not only to the book, but to the column of the book where it will be found.

Out of this "Slip" or "Reverse Posting" has been evolved the extraordinary idea of a "Check Ledger." This ledger has not a very large patronage, but has been tried by some large corporations. It is a small

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ledger ruled with the regular debit and credit columns, and a clerk is provided whose duty it is to open accounts in it which will correspond with the accounts in the real ledger.

The check ledger book-keeper goes over all the items already posted to the real ledgers and posts them (the figures only) again in the check ledger. He then compares his balances with the balances on the real ledgers and adjusts the differences.

We do not suppose any more inefficient check was ever devised. The majority of the mistakes made are usually found in the check ledger, the postings to which are always made hurriedly, and are therefore more than usually susceptible to error.

CHAPTER III.

Sectional Ledgers, Cash Book and Journals.

This article is addressed to a suppositious book-keeper who keeps the books of a mercantile house dealing in hats, gloves and hosiery—three departments.

It does not matter particularly what system of book-keeping is used, our remarks can be applied equally as well to one system as another. Having obtained a ledger and journal of some kind, the book-keeper will divide his ledger into sections—one section for city accounts, one for country accounts, one for purchase accounts, and one for sundry accounts. He will also divide his sales journal into three sections—one for hats, one for gloves, and one for hosiery. If the president of the company will not stand the expense of a proper cash book, the book-keeper will purchase some kind of a book which has only horizontal rulings, and will rule for himself, day by day as required, the following columns. On the debit side:

City Accounts.		Country Accounts		Purchase Accounts.		Sundry Accounts.		Hats		Gloves.		Hosiery.	

On the credit side of the cash book the book-keeper will provide similar columns, together with such expense columns as he can find room for, posting the totals of the expense columns monthly instead of posting individual items.

The cross-entry, or pro and con, journal, should be similarly arranged.

All department sales on credit should be entered in their respective columns in the journal to the credit of such departments.

All department sales for cash should be entered in their respective columns on the debit side of the cash book.

All department purchases on credit, or returns from, or allowances to customers, should be entered in their proper columns on the debit side of the journal.

All department purchases for cash should be entered in their proper columns on the credit side of cash.

We have stated that the ledger will be divided into four sections. The sundry account section will be the sun around which all the other sections revolve—the pivot of the constellation, the key to the system. This section

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will contain accounts with the other three sections. The account with the city accounts section will charge that section with all city debits, and credit it with all city receipts, allowances, etc. The balance of this account will equal the total of the balances in the city accounts section.

The balance of the account with the country accounts section will equal the total of the balances in the country accounts section.

The balance of the account with the purchase accounts section will equal the total of the balances in the country accounts section.

The sundry accounts section will be self-balancing.

To illustrate how this is done we will take the hat department for the month of June, 1898, and show a trial balance of the sundry accounts section.

Purchases of hats on credit during month, $800.

This will be the total of journal credits and it will be debited in hat column—one posting at end of month.

Purchases of hats or hat material for cash, $178.

This is total of hat column credit side of cash.

Cash sales of hats, $750.

This is total of hat column debit side of cash.

Credit sales of hats $620.

This is total of sales book credited to hats and debited to city accounts account or country accounts account on journal.

At the close of the month the totals of all columns in cash book and journal (except sundry columns), will be posted to their respective accounts in the sundry accounts section. The totals of each section of ledger column are posted to the debit and credit of each section of ledger accounts.

The results will be as follows:

HAT ACCOUNTS WILL SHOW:

DEBIT.

Hats on hand June 1st	$ 485 00
Hats purchased, cash	178 00
Hats purchased, journal	800 00
Bal. to gain and loss	250 00
	$1,713 00

CREDIT.

Hats sold, cash	$ 750 00
Hats sold, journal	*620 00
Hats on hand, July 1st	343 00
	$1,713 00

CITY ACCOUNTS WILL SHOW:

DEBIT.

Customers' balances June 1st	$ 765 48
*Hat sales	620 00
Glove sales	378 50
Hosiery sales	589 75
	$2,353 73

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CREDIT.

Hats, cash	$ 725 00
Gloves, cash	360 00
Hosiery, cash	625 00
Customers' balances July 1st	643 73
	$2,353 73

Gloves and hosiery accounts, country accounts account and purchase accounts account will be similarly arranged.

The method of checking the total balances of city accounts, country accounts, and purchase accounts sections of the ledger have been previously described. These sections having been balanced, it only remains to take a trial balance of the sundry accounts section, as per following illustration:

DEBITS.

City accounts receivable	$ 643 73
Country accounts receivable	1,947 20
Cash	246 25
Bank	4,750 00
Fixtures and fittings	600 00
Hats, mdse.	343 00
Gloves, mdse	295 50
Hosiery, mdse	450 00
Expense	265 00
Freight	78 50
Wages	1,250 00
	$10,853 18

CREDITS.

Capital	$5,000 00
Purchase accounts	3,200 00
Bills payable	1,000 00
Surplus from mdse	1,653 18
	$10,853 18

(Inventory taken monthly.)

This system can be carried out to any extent. If the book-keeper will provide himself with cash books and what are called trial journals, with sufficient columns, he can divide each section of his ledger alphabetically, and prove each section separately, opening an account in his sundry accounts section with each alphabetical division instead of with each section. This will be found very useful in some businesses where the number of customers' accounts is very large.

The departmental accounts will show the gross profits made in each department for each period when inventory is taken.

CHAPTER IV.

Self-Proving Accounting Systems.

This is the title now generally used to describe the "Boston Bank Balance Ledgers," and mercantile ledgers arranged on the same principle. The Boston Bank Ledger is arranged as follows:

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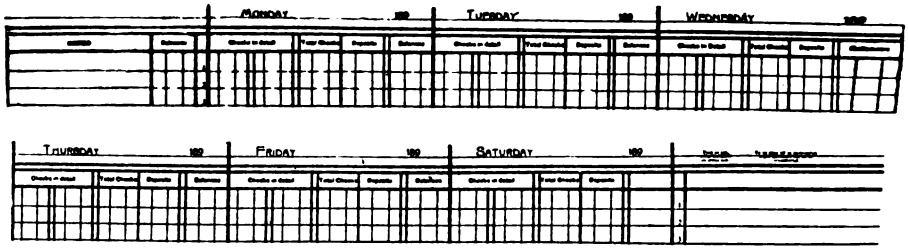
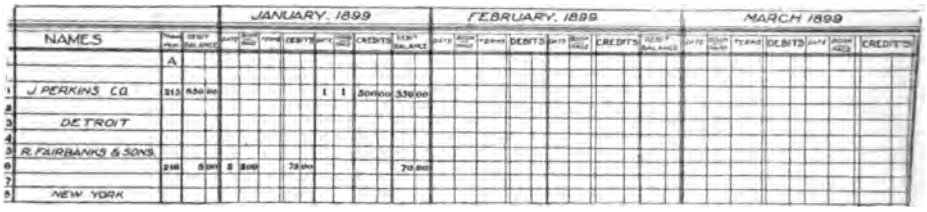


The Mercantile Balance Ledger is arranged as follows:



To prove the correctness of your work in any section, add your balances at the commencement of the period to the total debits, deduct the credits, foot the balances at the conclusion of the period and the result should show thus:

Total balances of Ledger A, January 1st.....	$19,504 72
Total debits, January 2d.....	4,872 92
	$24,287 64
Total credits, January 2d.....	5,809 80
Total balances of Ledger A, January 2d.....	$18,477 84

The total balances on January 2d are proved in two ways:

ILLUSTRATION OF LEDGER PROOFS.

Names.	Bal. For'd.	Folio	Debits	Folio	Credits	Bal. For'd.
Total Balances from Monday Jan. 1st.	19504 72		(Total) 4782 92		(Total) 5809 80	(Jan 2) 18477 84

It will be seen by these illustrations that the system has merit, for the reason that it localizes different sections of accounts and admits of their being proved separately by the method indicated.

FIRST PROOF.

Total Balances for'd. from Jan. 1st	19504.72	Total Credits Jan. 2d	5809.80
" Debits Jan. 2d	4782.92	" Bal's. for'd. " 2d	18477.84
	24287.64		24287.64

Thus, the postings of a given page, or series of pages, collectively can be footed and compared in a way to demonstrate the accuracy of the work.

In other words, if the book-keeper will provide a separate column in

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cash book and journal for each page of the ledger the footing of those columns in cash book and journal added together will always equal the

SECOND PROOF.

Total Balances fwd. from Jan. 1st	19504.72	Cash receipts	519025
Sales " 1st	443460	Discounts	37890
Journal Debits. " 1st	348.92	Journal Allowances Returns etc. etc.	24065
		Total Balances fwd. to Jan. 2d	18477.84
	2428764		2428764

footing of the debits and credits of the accounts posted to that particular page of the ledger.

In the ledger, arrange the debits and credits in sections, and provide separate columns for the balances, as shown by the illustrations. If you are a bank, keep your debits and credits in sections of days. If you are an ordinary mercantile house keep your debits and credits in sections of months. If you do not do very much business keep your debits and credits in sections of periods of three months, etc.

CHAPTER V.

Lightning Addition.

Lightning addition can be acquired by hard work, just as Schaefer and Ives learned how to play lightning and accurate billiards; but in each case it is necessary to kow how to learn. The average clerk might have nothing to do all his life but add 7 and 9, or 5 and 6, and do it all his life at the same rate of speed, only accelerated by his familiarity with the work.

By the method we append we offer the means of becoming "lightning additionists' if students will only work hard enough and long enough. The capacity to add rapidly is really the capacity to group the figures to be added. Thus, you must not think of 2, 7, 9, as 2+7+9=18, but you must see at a glance that it reads—"8." You must put the "8" into one pocket and the "10" into another pocket. If the next three figures are 9, 6, 5, you must read them as "0" and put the "20" into your other pocket along with the "10.".

In order to acquire this satisfactory habit, which will enable anyone to foot a column of ordinary size in less than the twinkling of an eye, the best plan is to get some plain cards ad mark them thus:

4	4	4	4	4	4	4	4	4
1	2	3	4	5	6	7	8	9

Make a set for each numeral, shuffle them well, and then throw them down as fast as possible one after another, calling the total without tens. Thus, the 4 and 9 combination is to be known as "3." After the student is sufficiently familiar with the first combination, let him make out another set of cards on the second combination as above illustrated, viz:

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4 4 4 4 4 4 4 4 4
1 1 1 1 1 1 1 1 1
1 2 3 4 5 6 7 8 9

By the time this second combination has been thoroughly mastered it will probably be found necessary to proceed to the third, as the speed obtained will be sufficient, not only for all commercial purposes, but to place the possessor far ahead of any ordinary business competitor.

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PART II.

Equation of Payments.

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Averaging Accounts.

CHAPTER I.

How to Average an Account.

THERE are many methods of "averaging accounts," which is one title of that arithmetical formula known as "equation of payments"—the determining or finding of the balance of interest due on an account, or finding the common time of maturity of bills due at different times.

The general principle involved is simple. Charge interest from due date on amount owing; credit interest on amounts received in payment, or part payment; the balance will be the interest due. On large accounts with numerous charges and credits it is a laborious task to obtain this balance, and hence, mathematicians have devised many methods which were more or less shortcuts. In fact, so many methods have been devised that it is quite confusing, and a thankless task, to study them all and follow up the different reasons for the different rules.

The rules appended for Single and Double Averages are simple, good, and easily borne in mind, and will answer every purpose.

SINGLE AVERAGE.

Set down the items in their order of due date.

Calculate the number of days between the first and seconds items, and multiply the amount of the second item by the number of days. This is called the product for average. Proceed in like manner with each succeeding item.

Foot the items and products for average.

Divide the latter amount by the first. The result will give the number of days forward from the date of the first item, which added to that date will give the average due date of the account.

Calculate interest at the required rate on the sum of the account from the average due date to the date of rendering statement.

	Matured Date	Amount of Bill	Days forward from Date of 1st Bill	Product for Average	
	Feby 15	100 -			Date of rendering Statement June 1st
	Mch 25	100 -	40	4000 -	
	Apl 15	100 -	60	6000 -	Basis-360 days to year
	May 15	100 -	90	9000 -	Interest: 6%
		400		19000 -	

47½ days forward from Feby 15
Average due date Apl. 2½
6% Interest on $400 from Apl. 2½ to June 1st. 3.83

PROOF.

Interest on $100.00 at 6 per cent from Feb. 15 to June 1	$1 75
Interest on $100.00 at 6 per cent from March 25 to June 1	1 08
Interest on $100.00 at 6 per cent from April 15 to June 1	75
Interest on $100.00 at 6 per cent from May 15 to June 1	25
	$3 83

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DOUBLE AVERAGE.

Assume as the basis for finding the average the 1st of the month in which the first charge is made. This is called the "Focal Date."

DEBITS.

Calculate the number of days from the Focal Date to the date of each charge, or to the due date if it is a time charge.

Multiply the amount of each charge by the number of days obtained. This gives the "Product for averaging."

Add the debit items of the statement and the "Product for averaging" column.

CREDITS.

Calculate the number of days from the Focal Date to the date of each credit.

Multiply the amount of each credit by the number of days obtained, which gives the "Product for averaging.

Add the credit items of the statement and the "Product for averaging" column.

Deduct the total of the credits from the total of the debits, and the total of the credit "products" from he total of the debit "Products."

Divide the balance of the "Product" columns by the balance of the "Items" or "Amount" columns. This will give the number of days forward from the Focal Date when the balance of the account was, or will be due. This is the average Due Date of the Account.

Calculate interest on the balance of the account for the period of time elapsed between the Average Due Date and date of rendering statement.

Date of Settlement July 1st — Focal Date Feby 1st

DEBITS				CREDITS			
Matured Date	Amount of Bill	Days forward from Focal Date	Product for Average	Date	Amount	Days forward from Focal Date	Product for Averages
Feby 15	100 ·	15	1500 ·	April 10	100 ·	70	7000 ·
Mch 25	100 ·	55	5500 ·	May 10	100 ·	100	10000 ·
Apr 15	100 ·	75	7500 ·	June 10	50 ·	130	6500 ·
May 15	100 ·	105	10500 ·				
	400		25000		250 ·		23500
	250		23500				
	150		1500				

· 10 days forward from Feby 1st

Average Due Date Feby 10th
6% Interest on $150 · from Feby 10th to July 1st - $3.50

Total time—Feb. 1 (Focal date) to July 1 (date of settlement)—5 months =150 days.

Divide total "product" of debits by amount of charges.

Deduct result from total days and calculate interest on total charges for balance of days obtained.

Divide total "product" of credits by amount of credits.

Deduct result from total days and calculate interest on total credits for balance of days obtained.

The difference between debit interest and credit interest will be the amount of interest due.

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DEBIT

Total Charges 400 00 — Total Product 23000 00 — Total Time 150 days

Less 62½ = Difference 87½ days

CREDIT

Total Credits 250 00 — Total Product 23500 00 — Total Time 150 days

Less 94 = Difference 56 days

87½ Days interest @6% on DEBITS - 400 00 = $5 83

56 " " " " CREDITS - 250 00 = $2 33

Interest due July 1st $3 50

As a matter of fact the formula of the proof is as good, if not better, than the formula of the original, because it seems more complete. A further illustration is, therefore, given, showing the double average thus obtained.

Focal Date July 1st — Date of Settlement May 1st

DEBITS				CREDITS			
Matured Date	Amount of Bill	Days forward from Focal Date	Product for Average	Date	Amount	Days forward from Focal Date	Product for Average
Jan 15	60 -	15	900 -	Mch 10	50 -	70	3500 -
Feby 15	80 -	45	3600 -	Apl 10	50 -	100	5000 -
Mch 15	40 -	75	3000 -				
Apl 15	50 -	105	5250 -				
	230 -		12750 - 55½ (days)		100 -		8500 - 65
			11450 1250 11450 1105 345				8500 5000 3500

Total days from Jan. 1 (Focal date) to May 1 (date of settlement) 120 days.

Debits—Total days 120—55½=64½. Interest at 6% on $230 00=$2 47

Credits—Total days 120—85 =35 . Interest at 6% on $100 00= 58

Interest due May 1.....$1 89

What is called the "Interest Process of Averaging Accounts" is so generally used that an illustration is hereto appended in order to complete the subject. By this method the interest is separately extracted in each calculation, the credits are subtracted from the debits, and the result is the same with a little more labor.

Date of Settlement May 1st

DEBITS					CREDITS				
Date	Amount	Date	Days to May 1st	Interest	Date	Amount	Date	Days to May 1	Interest
Jan 15	60 -	6%	105	1 05	Mch 10	50 -	6%	50	- 42
Feb 15	80 -	"	75	1 -	Apl 10	50 -	"	20	- 16
Mch 15	40 -	"	45	30					
Apl 15	50 -	"	15	12					
				2 47					58
			Less Credits	58					
			Int due May 1st	1 89					

There are numerous other methods of obtaining average due dates, and amount of interest due at a given date, but the methods above described will answer every ordinary business requirement.

In cases of "freak" averages, where the average due date will be found prior to date of first charge, it will be well to bear in mind that where the preponderance of weight is all on one side no average can be struck.

The average due date of an account is the theoretical time the NET BALANCE must have run to produce at a given date the correct amount of interest on that balance.

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Date of settlement assumed as Focal Date.
Nov. 1st date of settlement.

1894 DR.		1894 CR.	
May 14, $500×166.....	$83,000	July 9, $400×111.....	$44,400
June 16, 800×134.....	107,200	Sept. 11, 600× 49.....	29,400
July 21, 300× 98.....	29,700	Oct. 29, 200× 1.....	200
1,600	$219,900	$1,200	$74,000
1,200	74,000		
$400	$145,900	364 days back of Nov. 1st.	
		Average date, Oct. 26, 1893.	

Credit amounts in excess of Debit amounts.
May 1st, Focal Date.

1894 DR.		1894 CR.	
May 14, $500×14.....	$7,000	June 9, $400× 69.....	$27,600
June 16, 800×46.....	36,800	Sept. 11, 600×131.....	78,600
July 21, 300×81.....	24,300	Oct. 29, 200×179.....	35,800
1,600	$68,100	1,200	142,000
1,200			68,100
400			$73,900

4/739/184 days back of May 1st
Average date Oct. 26, 1893.
365 days' interest at 6% on $400.00..... $24.20

Proof. May 1st to Nov. 1st date of settlement—180 days.

1600/68100/43 days.
6400
4100
180— 43=137 days interest on $1,600.00 at 6%..... $36.54

1200/142000/118 days.
180—118= 62 days interest on $1,200.00 at 6%..... 12.40

Interest due $24.14

CHAPTER II.

Another Method of Averaging Accounts and Computing Interest.

SIMPLE AVERAGE.

Arrange the items in order of date. Use due date, if any.

Carry out balance of account on each date after items on that date have been entered. With every new entry there is, therefore, a new balance.

Multiply each balance by the time intervening between its date and the next succeeding entry.

Add amounts so obtained and divide by balance of account. The quotient will be the number of days to count backward from latest date, which will give average due date.

Compute one day's interest on total of "Amounts" column (if time has been computed in days- which will be the balance of interest due at latest date.

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Int. rate 5%.

1895.	Dr.	Daily Balances	Days	Amounts
Dec. 23	$1,000	$1,000	15 (Dec. 28 to Jan. 7.)	$ 15,000
Jan. 7	500	1,500	20	30,000
Jan. 27	2,000	3,500	14	49,000
Feb. 10	200	3,700	15	55,500
Feb. 25	300	4,000	10	40,000
March 7	1,000	5,000	..	
	$5,000		74	$189,500

$189,500÷5000=37.9 days back from March 7=January 28 equated due date.

$189,500@ 5% for one day=$25.96, interest due, March 7. Total due March 7, $5,025.96.

COMPOUND AVERAGE.

Proceed as before, but deducting credit "Amounts" from debit "Amounts" and dealing with the balance.

Required amount due Feb. 19, '96. Int. rate 7%.

	Dr.	Cr.	Dr. Bal.	Cr. Bal.	Days	Dr. Amts.	Cr. Amts
Dec. 1	$1,000		$1,000		7	$ 7,000	
Dec. 8		$800	200		12	2,400	
Dec. 20		500		$300	20		$6,000
1896.							
Jan. 9	600		300		9	2,700	
Jan. 18	700		1,000		32	32,000	
Feb. 19						$44,100	$6,000

44,100—6000=38,100÷1000 (net Dr. balance)=38, 1-10 days back from Feb. 19—average due date, Jan. 12.

38,100 @ 7% for one day=$7.31, interest due Feb. 19. Total due Feb. 19—$1007.31.

CHAPTER III.

The Conto Currento Method of Computing Interest on Accounts Current.

The method illustrated below is still largely used by European banking and commission houses in figuring the interest of accounts current rendered at certain intervals.

Date of statement April 15, '96. Int. rate 6%:

1896.	Time.	Due.	Days.	Numbers.	Debits.
Jan. 17	60d.	Mar 17	29	800	$2,758.63
Feb. 4		Feb. 4	71	355	500.00
Mar. 1	60d.	May 1	16	292	1,823.59
Mar. 15		Mar. 15	31	244	786.26
Mar. 31		Mar. 31	15	48	319.80
April 2	60d.	June 2	48	89	186.39
		Debit numbers from Cr. side.....		455	
		Balance of numbers		1,402	
				3,304	$6,374.67

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Jan. 1	Dec.	31	106	598	$ 563.75
Jan. 15	Jan.	31	75	1,875	2,500.00
Feb. 15	Mar.	1	45	450	1,000.00
Mar. 14	April	15			1,000.00
Mar. 14	May	15	30	150	500.00
Mar. 14	June	16	61	305	500.00
Credit numbers from Dr. side.....				381	
6% on balance of numbers (1402)..					23.37
Balance carried forward					287.55
				3,304	$6,374.67

EXPLANATION.

Multiply the principal (debit or credit) by number of days, point off last four figures at right and enter number left in "Number" column. Thus 2758.63×29=800.0027. Number to be entered—800.

On coming to items 3 and 6 on the debit side we find the date of maturity to be May 1, sixteen days after date of equation. The numbers for these items should therefore be written in red ink, not included in the footing of the column, but transferred to the credit side, as shown in illustration.

Similarly on the credit side we enter the 5th and 6th items in red ink and transfer them to the debit side.

Enter the balance of the "Numbers" column on the side to which it may belong, and compute interest due by dividing it (the balance) by 60, pointing off the second and third figures of the quotient to the right to get dollars and cents, as follows:

Balance of numbers (Cr) 1402÷60=$23.37.

CHAPTER IV.

A Symposium From The Book-Keeper.

November, 1896.

I have been trying to discover why I cannot find the average due date of the following statement of account:

1895. DR.		Terms.	1895 CR.	
Jan. 1.....	$247.34	30 days	Feb. 5.....	$100.00
Feb. 10.....	225.50	10 days	March 8.....	100.00
March 5.....	243.20	60 days	April 15.....	200.00
April 20.....	178.20	30 days	Dec. 31.....	200.00
				$600.00
			Balance due Jan. 1, 1896....	294.24
	$894.24			$894.24

I don't want the amount of interest due. I want the average due date.

U. P. B.

* * * * *

January, 1897.

To pass muster, it seems to me that an answer to the problem in "Averaging Accounts," published in your November number, should be one more of language than of figures. Thus, in figures I answer: the account in question averages due September 20th of the preceding year. Then you would ask: "How can the account be due at a time preceding the date of any single item?"

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So, to answer in a way that shall both solve and explain the solution, I submit:

The balance, $294.24 averages due Sept. 20, preceding year.

The credits, $600.00, average due June 22, current year.

The balance, $294.24, average due Sept. 20, preceding year.

And this average date is taken as a basic date in bringing down a balance; that, at any time this balance may from that new basic date produce the same interest as if the account had been duly charged with interest on the past due debits, and credited with interest on the payments and unexpired time of non-due debits.

The common expression, "Average due date of an account," will, in the special example given, lead the novice to wonder how the balance could be due before any of the items even date; but, if he will reflect that the expression is the proper one for the date (never mind the word "due") of an average account, in an abstract, mathematical sense, just as he knows that two subtracted from one does leave something, viz.: minus one, so he will better understand that it does not mean due in the sense of a certain bill, but the theoretical time the net balance of an account must have run to produce at any time the correct amount of interest.

This is the precise method used in finding the average date of balance of account. Thus:

1. Calculate interest to any assumed date after due date of latest item on each debit from its due date.

2. Ditto, for each credit.

3. Substract the total interest credits from the total interest debits; the remainder is, of course, the interest due on the account as a whole, to the assumed date.

4. Assuming the balance of the account as a principal (average date of account, meaning average date of balance of account) we know from (3) the interest due, and thus find the theoretical date for this new principal, which becomes a basic date for subsequent calculations, without the necessity of again going over the old account in detail. For want of a better name, this is called the "average due date of the account."

E. R. B., Chicago.

* * * * *

April, 1897.

I have read the question of "U. P. B.," in your November issue, which was answered by "E. R. B." in a subsequent edition in so able a manner that I do not believe it necessary to indulge in any further comment.

The system of averaging accounts, which I render below, is in nowise original, but appreciating its simplicity it is submitted for the benefit of those who believe "averaging accounts" an obstacle difficult to overcome.

Jan. 3,	30 days	$130	Jan. 4,	$250
Jan. 4,	60 days	258	Jan. 7,	180
Feb. 9,	19 days	159	Jan. 12	100

OPERATION.

Find the date when bills are due, setting opposite each respective sum, also credits, thus:

Feb. 2,	$130	Jan. 4,	$250
Feb. 3,	258	Jan. 7,	180
Feb. 19,	159	Jan. 12,	100

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Now, take the first date as a basis, same being indicated by a line drawn around it, and find the number of days between each item and the basis, then multiply the item with the number of days thus found:

Feb. 2,	$130×28 days	$ 3,640
Feb. 3,	258×29 days	7,482
Feb. 19,	159×45 days	7,155
		$18,277
	$547	
Jan. 4,	$150	
Jan. 7,	180×3 days	540
Jan. 12,	100×8 days	800
	$430	$1,340

Find the sum totals of all bills, payments and gross amounts as above. Subtract the sum totals of the credit side from the debit side and divide; the quotient will represent the amount of days from Jan. 4, at which time the balance of the account would be due, or May 29.

547 — 18,277
430 — 1,340

117 ÷ 16,937 = 145 days from Jan. 4.

L. B., New York.

* * * * *

June, 1897.

I desire to offer a solution of the problem presented by "U. P. B.," as follows:

In averaging accounts it is proper to consider and include only such credit items with dates falling within the radius of the original terms, and to discard those which come in irregularly and thereby lose all connection with the original transaction. In a compound average this rule is of particular importance, as will be shown in solution No. 2; therefore credit item of $200, dated Dec. 31, 1895, is left out of solution No. 1.

SOLUTION No. 1—Basis, January 1, 1895.

Jan. 1	$247.34	30	Feb. 1	31@10%	$ 2.13
Feb. 10	225.50	10	Feb. 20	51@10%	3.19
March 5	243.20	60	May 4	124@10%	8.38
April 20	178.20	30	May 20	140@10%	6.93
Total	$894.24				$20.63

Time counted forward.

	Cr.	Days Int.	
Feb. 5	$100	36@10%	$1.00
March 8	100	67@10%	1.86
April 15	200	105@10%	5.83
Total	$400		$8.69

Debits $20.63
Credits 8.69

To Bal. Debit Int $11.94

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Balance of account is $494.24, and will have to run 87 days from Jan. 1, 1895, forward, to earn balance of interest, which is March 28, the average date of equation. Now, from March 28, 1895, to Jan. 1, 1896, is 278 days, and $494.24 at 10 per cent equals $38.16 interest, and the account will stand as follows:

Jan. 1, 1896, balance of account.....		$294.24
Interest on $494.24 equals.....	$38.16	
Less int. for 1 day on $200, paid Dec. 31, 1895.....	.06	38.10
Balance due Jan. 1, '96.....		$332.34

SOLUTION No. 2—Basis, January 1, 1896.

Jan. 1	$247.34	30	Feb. 1	344	$22.95
Feb. 10	225.50	10	Feb. 20	314	19.67
March 5	243.20	60	May 4	241	16.28
April 20	178.20	30	May 20	224	11.09
Total.....	$894.24				$69.99

Time counted backward.

1895.

Feb. 5	$100	to Jan. 1, '96	329@10%	=$ 9.14
March 8	100	to Jan. 1, '96	298@10%	8.25
April 15	200	to Jan. 1, '96	260@10%	14.44
Dec. 31	200	to Jan. 1, '96	1@10%	.06
Total.....	$600			$31.89

Debits.....	$ 69.99
Credits	31.89
Bal. debit interest.....	$ 38.10
Bal. account Jan. 1, '96	294.24
Total, as stated above....	$332.34

Solution No. 2 shows that it is only additional labor to find average date of equation of an account after it lapses into innocuous desuetude without deriving any benefit from the effort. C. G., St. Louis. June, 1897.

A number of rules for averaging accounts have appeared in The Book-Keeper, but some of them, I think, are too much encumbered with figures. The method below illustrated has been adopted in our office, where the book-keeper is often asked for the equated time of the balance of an account at a moment's notice.

1897.

Jan. 5,	60	$350	Jan. 8,	90	$240
Jan. 30	60	200	Jan. 23,	90	150
Feb. 7,	cash	140	Feb. 10,	cash	100
Mar. 10,	60	110			
April 5,	30	290			

The book-keeper draws the account off on a statement blank, filling in as he goes the due date of each item, using 30 days as a month. For convenience in reckoning he uses the first day of some month for his basis. In

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this case he takes Jan. 1, '97, and computes interest on each item, using the 36 per cent one thousand day method. This method is deduced from the fact that any amount at interest for one thousand days at 36 per cent equals the principle, so that moving the decimal point to the left one, two and three places, gives interest for 100 days, 10 days, and 1 day, respectively. Thus:

Interest on $350 for 65 days.	
Interest for 10 days.....	$ 3.50
Interest for 50 days.....	17.50
Interest for 5 days.....	1.75
Interest for 65 days.....	22.75

After calculating the interest on the various amounts shown on the original account the book-keeper proceeds to arrange the following statement, which shows the balance of account and balance of interest.

STATEMENT—FOCAL DATE, JAN. 1, 1897.

Jan. 5	March 5	65	$350	$22.75
Jan. 30	March 30	90	200	18.00
Feb. 7	Feb. 7	37	140	5.18
March 10	May 10	130	110	14.30
April 5	May 5	125	290	36.25
			$1,090	$96.48

CREDITS.

1897.				
Jan. 8.	April 8	98	$240	$23.52
Jan. 23	April 23	113	150	16.95
Feb. 10	Feb. 10	40	100	4.00
			$490	$44.47
Balance			$600	$52.01

.60÷52.00=87.

87 days from Jan. 1 is March 28; due date March 28, '97.

W. F. A., Oklahoma City, I. T.

* * * * *

July, 1897.

The subject of averaging accounts has frequently been presented of late in The Book-Keeper, but being under discussion in the local society to which the writer belongs it was suggested that the paper he read might present a useful illustration to your readers generally.

The figuring should be direct to the purpose, which is, a statement, or settlement.

For statement June 1, 1897, subject to 6% int. after maturity.

1897.	Dr.	1897.	Cr.
Jan. 22.....30 days net	$ 133.84	March 21.	$ 500.00
Jan. 29.....60 days net	240.14	April 13	400.00
Feb. 12.....60 days net	530.25	Balance	223.43
March 4.....30 days net	219.20		
	$1,123.43		$1,123.43

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The first question is, will we gain in this instance by averaging direct to June 1, the date for our statement; or by averaging first to April 13, the latest date in the account, and figuring interest from there on? I will say the latter, as we thereby keep our time figures smaller by 47 in each case. We now restate the account as follows:

DEBITS.

1897 Matured Date.	Amount Invoice	Days to April 13	Product for Average
Feb. 21	$ 133.84	51	$ 6,825.84
March 30.	140.14	14	3,361.96
April 13	530.25		
April 3	219.20	10	2,192.00
	$1,123.43	75	$12,379.80

CREDITS.

1897.			
March 21	$ 500.00	23	$11,500.00
April 13	400.00		
	$ 900.00	23	$11,500.00
Total Debits	$1,123.43	75	$12,379.80
Total Credits	900.00	23	11,500.00
	$ 223.43	52	$ 879.80

$223.43 into $879.80=3.9+ or, say 4 days.

This means that balance of account would have four days to run to April 13, or in other words, that the average date of balance of account would be April 9. We therefore, make statement June 1, 1897, as follows:

Balance of account	$223.43
Interest on balance from April 9, average date, or 52 days at 6 per cent	1.94
	$225.37

To prove the above, divide 52, the balance of day totals, into $879.80, thus obtaining $16.92, the average amount, which at interest for 52 days will equal $223.43 for four days. W. C. P., Chicago.

* * * * *

September, 1897.

In the June number of The Book-Keeper, "W. F. A." says the best system is that which requires the fewest figures and the least mental work. The way I shall now illustrate will be to take the first date as "W. F. A." does, simply to illustrate that if you take the same date, figuring at 1 per cent per month is easier than 36 per cent per year.

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STATEMENT, FOCAL DATE JAN. 1ST, 1897.

DEBITS.

	Due.	Days.	Am't.	Int.
Jan. 5	March 5	65	$ 350	$ 7.58
Jan. 30	March 30	90	200	6.00
Feb. 7	Feb. 7	37	140	1.72
March 10	May 10	130	110	4.76
April 5	May 5	125	290	12.08
			$1,090	$32.14

CREDITS.

Jan. 8	April 8	98	$ 240	$ 7.84
Jan. 23	April 23	113	150	5.65
Feb. 10	Feb. 10	40	100	1.34
			$ 490	$14.83
Total			$ 600	$17.31

We now divide the $600 by 30, and get 20. We divide the 17.31 by this 20 and get 86½, which we call 87. Counting forward from Jan. 1 gives us March 28 as the date when the $600 is due. In dividing the balance of dollars due it is best to cut off the cents and the units of dollars and divide by 3. The above interest is 12 per cent a year, or 1 per cent for every 30 days. By removing decimal points two places to the left in the principle we have the interest for 30 days, and removing it three places we have it for three days. Take the first amount of $350 for 65 days. Sixty days is $7, three days 35 cents, and two days one-third less, or 23 cents.

S. H. T., San Francisco.

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PART III.

Manufacturers' Accounts.

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Factory Cost Accounting.

CHAPTER I.

General.

THE growing appreciation of the value of correct accounting methods in business is responsible for the demand throughout the United States for a standard method of treating factory costs. There are different conditions to be provided for in every business, but, nevertheless, certain fundamental principles can be laid down for the guidance of bookkeepers which will be of assistance and value in almost every conceivable case, and this is the principal object of this article. It is not presented to its readers as a complete encyclopedia on the subject of factory costs, but more as a work preliminary to one we hope shortly to publish on more comprehensive lines. Neither is it our intention to generalize extensively on the theory on which such accounts, or system of accounting, should be established. We will endeavor to make our information as plain and concise as possible, and to give as much as we can within the limits of an article of these dimensions.

* * *

In these days of keen competition it may safely be said that in a manufacturing business of any kind it is absolutely necessary to keep an accurate account of the actual cost of the article manufactured, and to establish such a system of estimating costs that contracts shall not be taken at a loss, and that goods shall not be ignorantly sold at a loss.

Numberless failures can be traced to an inefficient system of estimating or recording manufacturing costs, the merchant being unable to discover where he was losing money, and consequently being unable to apply the required remedy.

The merchant should be in a position to ascertain at any time the actual cost of production of any article manufactured, and to check the cost of production of such articles by a comparison with previous costs. It should also be possible for him to receive a report at any time required of the raw material, articles in process of manufacture, and manufactured articles on hand, without the tedious process of taking inventory, and the method of arriving at this estimated inventory should be so perfect that it will agree with the actual inventory whenever the latter may be taken for purposes of verification.

Some authorities consider that into this question of cost of production should also enter storage of manufactured goods, rent of factory, erection of plant, manufacture and depreciation of machinery and tools, and similar expenditures.

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We believe, however, that it is best to include only those expenditures which vary in proportion to the volume of production, afterwards pro-rating capital expenditures in fixing the prices at which the manufactured articles are to be offered for sale.

Generally speaking, therefore, our cost records must provide for:

Purchase of raw material.

Returns and allowances claimed on account of imperfections, etc.

Labor.

Other factory expenditures.

Manufactured stock.

In a factory of any size the best plan is to arrange for a separate set of books to be kept there, the main office simply charging the factory with cash paid out, and crediting it with expenditures accounted for. Thus, the main office will debit factory account with currency for wages or expenses, or checks in payment of raw material, and credit factory account with its report of "Wages paid, $—," "General expense, $—," "Accounts payable, $—." The trial balances of the factory and main set of books will be assembled for the purpose of compiling balance sheets, etc.

If the factory is small the factory accounts can be carried in the main office books, but it is not such a convenient arrangement.

In the first place, we will predicate an example where only one kind of raw material is used and only one class of articles manufactured. In this case we will require a factory journal which may be ruled as shown in form A.

Dr. Form A. Factory General Journal Cr.

Main Office (or Store)	Mnfd Stock	General Expense	Labor	Raw Material	Accnts Payable	Sundries	Blo	Names of Accounts	Blo	Sundries	Accnts Payable	Raw Material	Labor	Mfd Stock	Main Office (or Store)

When the raw material is received it will be debited to raw material account in the column provided for the purpose and credited to the concern from whom received in the purchase account column. From the periodical reports received from foremen or workmen, labor will be charged with the time expended on manufacture, and manufactured stock charged with the material used, "raw material account" being credited. Labor and expense will also be closed into manufactured stock account in order to ascertain total cost of goods manufactured. When manufactured stock is delivered to the store (T. H. & Co.) the store is debited and manufactured stock account is credited. When a balance sheet is prepared a report is required from the factory of all unfinished manufactured stock on hand and the labor so far expended on same, and the total incorporated as an asset.

The general expense of the factory, such as manager's and office salaries, coal, horse feed, engineer's wages, etc., etc., should be charged to a separate account, and pro-rated where there are different kinds of products.

The raw material account will thus show the amount of raw material which should be on hand; manufactured stock account will show amount of manufactured stock not delivered to store; unfinished manufactured stock account will show amount of raw material and partly manufactured stock

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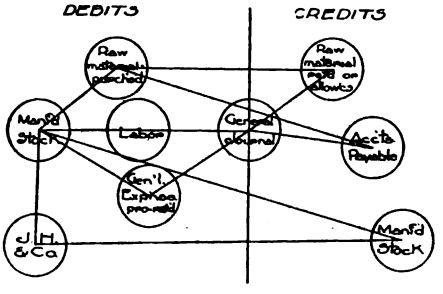
in factory in the hands of workmen, and cost of labor so far expended on same. The appended diagram may be found useful in assisting to a thorough comprehension of the plan.

The factory reports of material used and time occupied are generally made on blanks specially devised for the particular business for which they are required. They specify quantity of material received and used and hours spent on the job. Such reports are sometimes turned in to the office



daily, sometimes weekly, sometimes as a job is finished.

A book of record is kept of raw material received and issued, and the statistics in this book can be checked by the factory report blanks and by taking inventory. In the latter case the stock on hand should agree with the balance shown by the record of material received and issued.

The above are the fundamental principles on which all factory costs are ascertained, but the application of these principles is carried out in an infinite variety of ways in accordance with the conditions to be satisfied. There may be twenty different kinds of raw material, a separate account of each of which must be kept, and also of the labor on each kind of material.

There may be all kinds of extraneous operations, the cost of which must be carefully recorded, as in the case of a coal mining company, or a manufacturer of electric motors and appliances. These present an opportunity to the accountant for the exercise of his skill in adapting his various forms to the special requirements of the case.

One of the most important features in the system of factory accounting is the pay roll. A great deal of time is usually spent in perfecting an efficient system of recording and paying wages, and a great deal of time is invariably wasted where efficiency has not been obtained. Such a system should afford a guarantee against stuffing the rolls, or charging up unearned wages. It should also furnish a simple method for accurately obtaining statistics of costs of articles manufactured.

The actual number of hours and minutes should be recorded, as the workmen enter or leave the premises, by one of the modern "Time Recorder" machines. Where possible it is best to use one on which the writing of the signature makes the required record, as this prevents one man from registering both for himself and a friend who may be late or absent altogether.

Each workman should be furnished with a blank ruled to suit the peculiarities of the business, on which will be entered the description of the job, or contract, and on which the workman will record time occupied and amount of individual production.

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The forms we now present are not expected to be suitable for every business, but are intended to illustrate the fundamental principles on which an efficient cost system should be based.

Fig. 1 is a Stock Record, showing disposition of material received and quantity on hand. This record should be partially or completely verified at certain intervals in order to show that the goods called for are actually on hand.

STOCK BOOK - FIG 1 Name of Material

Date	Folio	Description	Quantity	Amount	Date	Stock Order No	Quantity	Amount	Balance on hand

Fig. 2 shows the order on the stockkeeper for material to be used in manufacture of product. These orders constitute the storekeepers' vouchers for material delivered, and the quantities are posted therefrom to the Stock Book.

THE AMERICAN MANUFACTURING CO

(FIG 2) STOCK ORDER No ....

To Storekeeper:

Deliver to bearer the following on Shop order No .....

.....

.....

.....

.....

.....

.....Supt.

Each workman is furnished with a cost card (Fig. 3), on which he records particulars of time consumed and material used on the contract, or job, on which he is engaged. When the job is completed this card is

(COST CARD FIG.3) THE AMERICAN MANUFACTURING CO.

Name of employe..... No.....

Shop Order	Material out	Time	Date finished	Quantity	Dept	Material used	Prime cost	Labor	Sundries	Total Cost

turned in to the cost clerk, who figures out on it the cost of material, labor and sundries and enters it on the Cost Record of Summary (Fig. 4). A separate page is allotted to each contract or job, and the total cost of same ascertained. This amount is then posted to the contract account in the ledger, which is credited with contract price, the difference being the amount of either loss or gain. Where certain staple articles are manufactured a comparative statement of cost of manufacture should be maintained, in order to ascertain that such costs are not excessive or exceptional in any way.

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FIG. 4 COST SUMMARY

Date	Cost Card No	Name of Workman	Dept.	Quantity	Prime Cost	Labor	Sundries	Folio	Total Cost

In Figure 5 we show a form of Pay Roll Book, the particulars of which are obtained from the Time Recorder. If the Pay Roll Book is compared with the workmen's cost cards a very good check is obtained on the total time reported.

Some establishments still have their employes sign the pay-roll, but where the hands are very numerous this is found laborious and inconvenient, besides exposing to the view of the person signing the amounts paid to others.

FIG. 5 PAY ROLL BOOK

Name		M	T	W	Th	F	S	Total Time	Rate	Amount	Advanced	Balance due		When Paid
	1												1	
	2												2	
	3												3	
	4												4	
	5												5	

Fig. 6 shows a very good form of combined wages card and voucher, which can be used with advantage.

(FIG. 6) WAGE VOUCHER

THE AMERICAN MANUFACTURING CO.

CASHIER: 1900

Pay to ..... the sum of..... in payment of wages due as follows:

Monday ..... hours
Tuesday ..... "
Wednesday ..... "
Thursday ..... "
Friday ..... "
Saturday ..... "
Total ..... hours

..... Supt.

Received of The American Manufacturing Co. the above amount in full of all claims this.....day of.....1900

(Signature).....

All goods manufactured will be made in accordance with instructions given the foreman of the department, or the superintendent of the factory. On completion of the goods the shop order will be returned to the office, and the goods delivered and billed. We append an illustration of shop order referred to above (Fig. 7). When completed it is usual to transfer the goods from factory to store, the factory charging store, with cost, and

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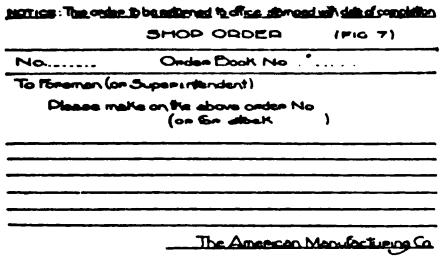
the store crediting factory and debiting manufactured stock. The rela-


NOTICE: The order to be returned to office stamped with date of completion

SHOP ORDER (FIG. 7)

No..... Order Book No .....

To Foreman (or Superintendent)

Please make on the above order No
(or 6n sheet)

The American Manufacturing Co.

tionship between the store and factory accounts may be conveniently illustrated here:

FACTORY BOOKS.

Debit—	Credit—
Raw material.	Accounts payable.
Labor (paid).	Store.
Sundries (paid).	Store.
Accounts payable (paid).	Store.
Store.	Manufactured stock (delivered).

STORE BOOKS.

Debit—	Credit—
Labor.	Cash.
Factory sundries.	Factory.
Accounts payable.	Sales account.
Manufactured stock.	
Customers.	

In a great many establishments it is usual to add a certain percentage to manufacturing cost to cover factory general expense, maintenance, depreciation, etc., so that on the store books the factory account will show even.

If a customer orders a suite of furniture separate shop orders should be made for each article as the separate cost of each is required to be tabulated.

Fig. 3 can be used for piece work if such a system of labor is employed, but a special form of pay roll would be necessary to take care of the amount of piece work done instead of the number of days or hours employed.

The invoices of material received will be O. K.'d by the stock-keeper to vouch for goods duly received, by the purchasing agent to vouch for correct price, and by the book-keeper to show that amount is correct.

All expenditures other than those incidental to the process of manufacture will be separately classified and recorded.

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CHAPTER II.

Furniture Business.

In the many articles and discussions published in rgeard to "Cost Accounting" very little attention is paid to the manufacture of "stock" articles, i. e., goods not made to order but in certain standard sizes and qualities.

As an example we will take a furniture manufacturer who makes chairs, tables, couches, ornamental stands, etc. It is not necessary in such a case to install a complex system of time records, as a certain standard of material used and time occupied can be established. One chair of a certain kind and style should cost exactly as much as another chair of the same kind and style. The first thing the manufacturer should do, therefore, is to fix the standards, and then hold the foreman, or superintendent, responsible for maintaining the standard.

The accounting department has now to provide a check on the cost of production which is accomplished by means of a cost ledger. In this ledger open an account with each line of goods manufactured.

In the general ledger open two accounts—a raw material account and a manufacturing account. All bills of raw material are debited as they come in to raw material account.

Each shop order, on completion, will show amount of raw material used and time consumed. Debit cost to account in cost ledger and record comparison with standard, thus:

No. 5 Upholstered Chairs. Standard $3.15.

S. O. 5719	Material	$16 42		
	Labor	16 25		3.267

No. 5 upholstered chairs account will always show whether orders are above or below standard, and as a separate "key" will be kept to the standards, showing proportion on which established, the cause of any disparity can be instantly ascertained.

At the end of the month the closing entries will be on the following order:

Debits.		Credits.
	Raw Material	$5,500 00
$5,500 00	Manufacturing Account.	
	For material used as per shop orders Nos. — to —	
	Wages	$9,250 00
9,250 00	Manufacturing Account.	
	For time reported on shop orders Nos. — to —.	

These entries will correspond with the cost accounts in the cost ledger. The balance of raw material and wages accounts will represent assets; material on hand and used on uncompleted shop orders; time employed on uncompleted shop orders.

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CHAPTER III.

Tool Manufacturing.

Stock received from suppliers is purchased by means of triplicate orders, and if necessary a special Stock Purchase Order is also issued. For a full description of similar forms used for stores, see September Book-Keeper.

Quotations received are kept on record by means of a card index, on the same lines as the Store Quotations. Stock ordered is also indexed exactly as Stores on Order. In a small concern all quotations received, whether for stores or stock, might be kept in the same index, and Stores on Order and Stock on Order (from suppliers) in another index. If this plan is followed it will be found well to use a different colored card for stores and stock.

The stock-keeper being responsible for keeping on hand a proper quantity of the various lines required, requisition upon the manager for anything he may want manufactured by the shops for stock. It will be seen that Requisitions for Stock (Form 200) have a liberal space for remarks. This is in order that the Stock-keeper when calling for manufactured stock may give the management the benefit of any knowledge he may have as to the best or probable future demand for the goods for which he is asking, and may put on record any suggestions he may wish to offer as to increasing or decreasing the quantities to be made, as compared with previous orders issued to the factory for the manufacture of similar goods.

As a matter of convenience the Stock-keeper will make requisition for the same class of goods only upon the one requisition, and not use the same sheet for different classes of such stock as may be required.

These requisitions for stock (Form 200) are in duplicate, bound in books of 100 each, the first or original perforated for removal, and also punched at the top for an arch file.

The Stock-keeper must be careful to have his requisition for stock bear the date he actually sends it to the Manager. The latter issues Factory Orders (Form VI.) for the manufacture of the lines of which he may approve, and notes opposite such lines the number of the order covering same and quantity ordered. With regard to other items upon the requisition, he notes any decision or remarks he may wish. This being done, the requisition is returned to the Stock-keeper, who notes upon it the date of such return, and with a colored pencil marks prominently on the duplicate in his book the same date. The original is then placed upon an arch file with other requisitions for stock, each class of goods called for being separated by a guide card indicating the nature of goods asked for.

It must be understood that this file is for the convenience of the Stock-keeper only, and while not to be regarded as a record further than of the issuing of certain factory orders for stock, will yet well repay a little attention on the part of the Stock-keeper. It will be noted that the Manager fills in opposite each item the number of the stock order, and the quantity

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such order calls for. As goods are received into stock on account of such order, the Stock-keeper draws a line through the quantity, and substitutes the balance due. There is no check or balance upon this quantity so, as I have said before, these figures cannot be used as the basis of book entries, but they will prove of very great value to the Stock-keeper, enabling him to keep a proper supply of various lines of stock, both on hand and in process of manufacture. The duplicates of these requisitions for stock are simply to prevent the very frequent error of asking for the same goods when thy are already on order in the factory, and also of keeping the Stock-keeper posted as to what lines of stock required he has or has not called for. For almost all purposes the information found on these requisitions, and on their duplicate will be all that the Stock-keeper is likely to require. Should, however, he need closer information as to the various lines of stock being manufactured in the shops, he has reference to the card index or Factory Stock Orders.

THE M.R.Co., Ltd.

Date 2 Jany 01

REQUISITION FOR STOCK.

TO MANAGER:
If approved please issue Factory Orders
for Stock as follows:

QUANTITY	ARTICLE	ORDERED		REMARKS
		ORDER NO.	QUANTITY	
200	1" Oil Cups. Fig. 1821	K917	150	Last 200 lasted 7 Mos.
200	2" " " "	K.918	200	50 ordered today by M.K.Co.
50	5" Steam Gauges, Fig. 1627	Can import cheaper – See me B.D.C.		

PASSED UPON
Date 7/7/01
B.D.C.
MANAGER

SIGNED J.E.J.
Stock-keeper

FORM 200

Form X shows the card made out for each factory order issued for the manufacture of stock. As has been shown, these cards serve as an index of unfinished orders in the factory, and a record of deliveries on account of same to stock, and it is only in these ways that they are of value to the Stock-keeper prior to their completion. They serve as shown later, however, after completion as records of cost, comparisons with previous costs of similar articles, and also a record, by means of comparing dates issued, quantities called for, and dates finished, of the past demand for certain lines of goods. The information on these cards, both before and after com-

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pletion of orders, being accessible to the Stock-keeper, and taken in conjunction with the information he has on record on his own duplicates of requisitions for stock, should enable him to keep a pretty safe course between running too low, and over-stocking on the various lines he handles.

When times are prosperous and the turn-over large, it is an easy matter to gradually lock up a large part of the profits made in stock, good, bad, or doubtful, as the results may prove.

It is well to remember that stock that to-day may be good as wheat, by such a slight cause as the finding of advantages in using other materials, or other ways of obtaining certain results, or even a change in style or fashions—by any or all of these causes, such stock may be rendered in a very short time more or less unsaleable, and even reduced to that least of all commercial values—scrap.

A gradual increase in the stock on hand is unusual, unless being a natural result of accumulating least marketable lines of stock. "In times of peace prepare for war:"—in time of big demand for goods push out all doubtful or questionable stock possible.

For convenience I have assumed that the stock of the concern under discussion be divided into two main divisions, namely, purchased, and own manufacture, and that these are subdivided into three classes, namely, A, B, C. For the sake of simplifying my description of the system followed, I have made no reference to the keeping of a Stock Ledger in describing the course or treatment of any of the forms. The question of a stock ledger I will take up by itself, and if one is to be kept, the only change necessary in the forms used will be an additional column for the stock ledger folio.

When stores are issued by the Store-keeper they are merely transferred to another account of the company. When stock, however, is issued, it leaves the possession of the company and is transferred to another party. It is this differecne that causes the greatest difference in the treatment of stock, and of stores.

It is absolutely impossible to provide a system that will eliminate the possibility of goods which have been made for stock, being shipped or delivered without being charged, but when goods have been manufactured for a certain customer there should be no possibility of their delivery without charge for same, and if the plan here described is carried out in all its details, such an error cannot occur. The system is intended to have the least possible clerical work done in the Stock-room, and as far as possible to have all records and entries made and kept in the office. In proportion to the carrying out of this idea will the Stock-keeper's time be left free to devote to the duties of his department. In a manufacturing business, if the shipments are to be promptly made, and properly looked after, the Stock-keeper will require a certain amount of time to trace up in the shops, articles being manufactured both for stock and customers' orders.

The question of keeping track of selling prices and quotations given, depends very largely on the nature of the business done, and the frequency of quotations and prices being asked. In the present state of the market, when so many firms find it necessary to notify their customers on the face of each invoice, "Prices subject to change without notice," this question is a very serious one.

If, owing to looseness in the quotation department, a customer is quited

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25c for goods for which he has been paying 26c, the loss to the firm is frequently greater than the amount involved in that particular order. It is an easier matter to drop a price 1c than to raise it a very small fraction of a cent, and most buyers are somewhat suspicious of an advance in price, no matter how small, when the explanation given is that the lower price was an "error of the quotation clerk."

THE M. R. Co, Ltd.

QUOTATIONS GIVEN

January 30. 1901.

GIVEN TO		FOR	ENT'D ON CARD	PRICE	REMARKS
Wilson Co.	Shc	70 Oil Cups ½" Fig 1320 Nickel plated	✓	33⅓% off	
Ross	Mtl	15 Oil Cups 2" as made for Str Western in 1899		3.00 Each	2/17/01 Amended to 2.70 net for 25 Acid Order 2/11/01.

BOOK FOR QUOTATIONS GIVEN FORM 201

No matter how strictly a firm tries to carry out the "one price to all" idea, it is few firms who in the present day do not, more or less frequently, sell exactly the same goods to different customers at different prices. In view of these facts the time expended in keeping accurate records of selling prices and quotations given, while to some appearing to be wasted, may be of great value in the results obtained. Unfortunately the results of such work, though very real and tangible, may be almost invisible, while the labor expended to obtain them may be very evident. The system here described may or may not suit individual cases, but the rule that no quotation shall be made without being put on record where, if an order is given or the quotation asked for again (no matter after what length of time), it may be accessible—is sound.

Discounts and selling prices of such goods as appear in the company's catalogue, are listed, preferably in private mark in a catalogue bound with a blank leaf between each illustrated or printed page. This catalogue is kept at the Order Clerk's desk. After this plan has been in vogue for some time, and the selling prices of most of the firm's product is listed, many inquiries received by mail or phone can be answered from the information there obtained.

The Billing Desk being provided with a desk phone, a Memo Book of any convenient size, called the "Quotation Given Book," is kept beside it. This is simply a memo book—the only ruling being a line marking off a column about one and a half inches on the left hand side. When a quota-

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tion is asked for over the phone which cannot be given from the information contained in the catalogue, the details of the article called for are entered in this book with only the name of the party inquiring in the left hand column. This results in the loss of a certain amount of space, but

DATE Feb 22 01

FROM N. R. Ross
Overtown

Order Given by N R Ross
" Recd by R K S

REMARKS	5 promised for 2nd prox.
25	2" Oil cups as made for Sta. Western in 1899 @ 2,70 Ea Net See F O T1421 Feby 1899 R. 3781 3/11/01 " 3793 3/16/01 3845

O.K FOR MANUFACTURE
S D E
MANAGER

O K FOR CREDIT
E W T
SEC'Y.-TREAS.

FORM 202

this loss is more than counterbalanced by the greater ease with which any required name may be found. The specimen of this form is simply for the purpose of showing how easily any name may be found in such a book, if the column is reserved for names only. The price quoted is entered, and if an order is received at once that fact is also noted and the order written out on Memo Order (Form 202). A small index in connection with this book will prove of great value, and occupy but little time to keep entered

THE M.R.Co. LTD. QUOTATIONS GIVEN

Ross N.R. — Lee Town

DATE	FOR	PRICE	REMARKS
1/30/01	15 2" Oil Cups	3 00 ea	O/B for 2 7
2/17/01	25 " "	2 70 "	" "
2/27/01	1 10" Steam Gauge	10 00 "	Letter Feb 161

CARD FOR QUOTATIONS GIVEN
FORM 203

up. Each morning the quotations in this book and also those which may have been made by letter, and a copy of which will, of course, be found in the Letter Book, are entered upon a "Quotation Given Card (Form 203). This card is filed away (alphabetically) in an index drawer called "Quotations Given Index" with what guide cards may be necessary. If desirable

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this index may be arranged according to towns—the cards for each town being classified alphabetically by customer's name.

At first sight it would appear as though this plan would result in a very large accumulation of cards containing quotations given. If, however, the firm is in possession of a pretty complete catalogue of goods of their manufacture, and the Order Clerk's copy of this catalogue used as and to the extent it should be, it will be found that by using both sides of these cards, very few customers will require more than one card a year. When a new year begins cards of another color should be used, and at the end of say six months all cards of the previous year may be taken out and filed away—classified and indexed on the same lines. It will thus be seen that the current index will always contain, at least, six months' quotations, while quotations given previously will all be together in such shape as to be immediately available for reference if required.

CUSTOMERS' ORDERS.

The ideal system of keeping and handling of customers' orders consists in the making out of a card for each order received, filing this card in indexes arranged according to province, town, and alphabet, and on this card noting all transactions in connection with such order—from the time it is received until the last item is either shipped or cancelled, or the customer advised to that effect.

Except in exceptional cases such as a business having branches located in various parts of the country, and each branch doing a large business, this plan is too cumbersome, expensive, and complicated, and will result in too much duplication of work to be a wise one to adopt.

THE M.R.Co, LTD.
SHIPPING ORDER

Date. July 7, 1901
SOLD BY E.M.T.
NO. R. 2827
Name Beach & Thorne
TERMS 3 Mos
INVOICE NO 1413
Address Dearborn St.
O.K. K.F.

QUANTITY	ARTICLE	FORM NO.	COST PRICE	COST VALUE	SOLD PRICE	SOLD VALUE	CLASS	REMARKS
50	Oil Cups Fig 1018		00	00 00	00	00 00	M C	
		FORM 2038.						

The alternative plan is to make the order itself after it has been issued to the sbhipper bear on its face all the information above spoken of, but to also keep in the office accurate and promptly obtainable information as to the exact location of any given order, and to show not only in whose

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possession such order may be found, but also its exact location among the other orders which the same employe may have, and if filed away, to show the number of the page of the book of which it has become a part.

The term "Shipping Order" is hereafter used to designate written instructions to the Stock-keeper or Shipping Clerk to ship or deliver certain goods to a named party. Such shipping order bears a number with the

THE M.R. Co. Ltd
DELIVERY SLIP

DATE Jan 11, 1901

Messrs. Beach & Thorne.
Dearborn st.

PLEASE RECEIVE FROM The M.R. Co. Ltd
IN GOOD ORDER AND CONDITION AS FOLLOWS:

50	Oil Cups Fig 1018.

FORM 203 b.

KEEP THIS SLIP

prefix "R" and emanates only from the office. The rule is that no stock must be shipped or delivered without such written instructions from the office. In most businesses it will be found impracticable to strictly live up to this rule, but the only exception that should be made is the giving to the Stock-keeper a certain amount of authority to ship such stock as may be sold by him or his assistants personally. In such event he charges them out on a form exactly similar to the Shipping Order, but bearing no register number. Such forms are handed to the Billing Clerk at certain times, and by him entered in the register and given a number.

This form is exactly the same as the Shipping Order, but is padded in such a way that by the one writing the Stock-keeper makes out a Shipping Order (Form 203a), Delivery Slip (203b), and Receipt (203c). A reference to these forms shows that they each take only such information as properly belongs to them—for the purpose for which they are used.

In most convnient access to the Order Clerk is a cabinet containing as many drawers as may be required, labeled as may seem best either acording to customr's name, or of alphabetical divisions. The drawers in this cabinet are about 9"x12". Each drawer contains a set of manilla sheets so cut for index purposes as may be decided upon. These manilla sheets are kept in their place by rods running through perforations at the extreme inner edge and held together by an easily released spring.

As soon as a shipping order is made out or received upon the proper form it is entered in the "Shipping Order Register" (Form 204) and given the first blank number therein.

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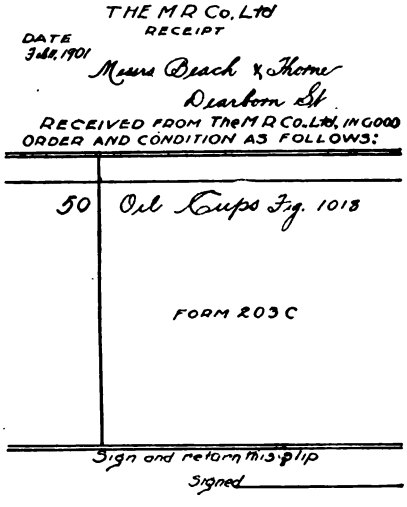
Given the above appliances and the necessary forms, the proper and complete carrying out of this system in all its details should make the "Shipping Order Dept." one of the most smoothly running branches of all the clerical work in the entire business. If, however, the detail or routine work of this system is allowed to run behind, or if certain details apparently useless and unnecessary are not carried out, then, when the information which ought to be obtainable from this department at a moment's notice is asked for, it will be useless to expect the results which alone can


THE M R Co. Ltd
RECEIPT
DATE
Feb. 1901
Messrs Beach & Thorne
Dearborn St.
RECEIVED FROM The M R Co. Ltd, IN GOOD ORDER AND CONDITION AS FOLLOWS:
50 Oil Cups Fig. 1013
FORM 203 C
Sign and return this slip
Signed

prove the value of this plan. If the plan is in all its details carried out as intended the cabinet of drawers referred to will show at any time.

A. The date goods called for and all other details of all orders on hand to ship, or simply supply stock to any named person, and, which not having been entirely shipped or cancelled may be called "Uncompleted Shipping Orders."

B. On such orders there may be one or more register numbers, if only one the order is still in the Shipping Clerk's hands. If more than one, the last one contains such articles as have not yet been shipped and is in possession of the Shipping Clerk. The others are part shipments and have become pages of the Binder called the "Day-Book Details."

C. On these uncompleted shipping orders there may be found one or more numbers with "F. O." before them. This indicates "Factory Orders," and shows the manufacturing order number on which certain required articles are being made up in the shops.

Before proceeding to describe in detail the forms required and course followed, it must be distinctly understood that with the exception already mentioned of goods sold directly in the Stock-room, this cabinet receives the original authority for all Shipping Orders issued by or from the office to the Stock-keeper, classified as may be found best and each class arranged alphabetically. This cabinet retains such original authority until all the goods called for have either been supplied or the order cancelled.

This original authority may be:

A. A customer's written official order.

B. A letter.

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C. A telegram.

D. A Memo order (Form 202).

The first three will reach the firm in the ordinary course of business; the last, the memo order, is used when none of the other three are received by the company, or when being received they contain more than the actual order and are, therefore, required by other than the Order Dept.

In some cases memo orders may be used to supplement or explain a letter or telegram, in which event they are attached to the letter or telegram as the case may be.

Memo Orders (Form 202) are put up in pads of about 100 each, and are supplied to any employee who is likely to take an order from a customer, either verbally or by telephone. As I have said, these memo orders

THE M.R Co, Ltd

REGISTER OF SHIPPING ORDERS

DATE		NO.	NAME	SOLD BY	SHIPPED		INV. No.	REMARKS
Jan.	30	2821	Jonas & Co.	JHS.	Feby	7	1392	See B.O. 2837
		2						
		3						
		4						
		5						
		6						
Feby	2	7	Beach & Thorne	EHS	Feby	11	1413	
		8						

FORM 204

are used when no other written authority for the issuing of shipper's order has been received. When an order is receivd over the phone, the name of the party giving it should be ascertained and noted on this form, and if an order is given verbally by the employee of any customer, his name should be marked or he should initial the form.

In some cases it will be found advantageous to supply certain employees who, while not actually travelers, would have frequent use for it, with a book of these forms perforated for removal.

In a great many cases customers (particularly out of town) would be glad to accept and use pads of these forms, and this would, in many cases, result in that much to be desired end—of having such part of the correspondence received by the firm as may contain orders, kept entirely separate from that treating of other matters. When a letter is received containing, in addition to an order, other matters requiring the attention of other employees than those of the Order Dept., such part as should be sent to the Order Dept. is indicated by means of a colored pencil and the stenographer makes a copy of this indicated part on a Memo Order.

Travelers' orders are received on the regular Shipping Order forms, and the stenographer makes out a copy on a Memo Order, both then going to the Order Clerk. The original is given a registered number in the

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usual way, and this number is noted on the stenographer's copy, which is then filed in the index as an original authority.

Such mail as contains only orders goes directly to the Order Clerk, who at once makes out a Shipping Order (203a) for the goods called for. This shipping Order he enters in the register opposite the first blank number, which number he places on his original authority.

When the Order Clerk knows that a Factory Order (VI.) will be required for the making of goods called for, he makes out such order and sends to the Factory Office in the usual way, noting on the Factory Order for which the goods are required, the register number of the Shipping Order and also noting on the Shipping Order in the column marked number, the number of the Factory Order which he has issued. This Factory Order number he also notes on his original authority, whether letter, telegram,

THE M.R Co. Ltd.
MEMO INVOICE

The E. H Beach Co.
Detroit Mi.

DATE July 27. 1901

No 427 per Express

13	Oil Cups Special Instructions

FORM 205

PRICED INVOICE TO FOLLOW

or memo order as the case may be, and which original authority is then filed away in the Shipping Order cabinet, and the Shipping Order itself sent out to the Stock-room for attention.

The specimen of Memo Order (202) here given, it will be seen, contains three register numbers. The first is the original order issued to the Shipping Dept.; the others being such part as has been transferred to back orders when part shipments have been made. In the case in question the register will show, as later explained, the page of the Day-Book which the original order has now become, and also the pages of the various part shipments made. The last register number, if having no invoice number opposite it, is thus shown to be in the possession of the Shipping Clerk, awaiting fulfillment of the last lines of such order. The Order Clerk (if the work is kept up-to-date) will have in his possession each day only the shipments of the previous day, and these he should hand to the Billing Clerk at an early hour enough to permit invoices being mailed the day after shipment of goods, if not on the same day.

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CHAPTER IV.

Orders.

In a manufacturing business it is impossible that invoices should be mailed always the day the goods are shipped or delivered, though in many cases this would be the result of carefully carrying out this system. If, however, a certain percentage is got out the day of delivery, the getting out of the balance the day after delivery is that much easier, and except in very exceptional cases invoices can and should be mailed within the 24 hours after the goods have left the possession of the company.

In exceptional cases where this may be impossible, such as being unable to bill for a customer until other goods are sent forward, or being unable to ascertain the cost price upon which the selling price is to be based, the charge must necessarily be held over. In such cases to give the customer an opportunity of checking the quantity of goods received a Memo Invoice (Form 205) is sent, and the date such memo is sent noted on the Shipping Order. These forms may be bound in books, in duplicate with the original perforated for removel, or a letter-press copy of them may be taken.

The Stock-keeper is supplied with two files for his Shipping Orders; one for current orders, or such as he may reasonably expect to ship at once, and one for back orders—that is, orders which cannot be shipped at once, on account of goods having to be manufactured, or from some other reason. The orders on this back order file are arranged alphabetically, and thus all back orders for a certain customer will be together.

In a large business and as a matter of convenience, it might be well to provide two such files, for city and country customers respectively. A more convenient file than any spring book-binder is a plain board file—a little longer than the Shipping Orders, with a spring clip at the left-hand side, a sheet of ordinary heavy paper being used if found advisable, to protect the top order.

The Stock-keeper will also be provided with a wire correspondence basket, in which he places, as they are ready, all papers intended for the office, whether Shipping Orders, Credit Notes, Way Bills, etc. The contents of this basket are taken into the office four times each day, and at stated and regular hours.

The Order Clerk is provided with a similar basket, in which he places all orders, whether for Stock-keeper or Factory Clerk. This basket is also emptied at stated hours, and the contents delivered to those for whom intended.

On receipt of a Shipping Order the Stock-keeper first ascertains if any of the goods called for will have to be specially manufactured, and also if he can supply enough to make a part shipment, or if the entire order will await such manufacture. In the latter event he marks in the space for remarks, F. O. (Factory Order), opposite such lines as will have to be manufactured, and puts the order in the correspondence basket. If, however, his intention is to make a part shipment, he puts the order on his file after marking the necessary items as above.

When a shipment is being made ready, he checks off each item as it

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is packed or laid out ready for shipment, and if the entire quantity called for of each item is marked in the column headed quantity shipped. This denotes that that particular line has been entirely supplied. If there is any difference in quantity between what he ships and what the order calls for, he marks plainly the quantity which he actually ships or delivers. If the balance is to be shipped at a later date, he marks B. O. (Back Order) in the space for remarks, and places the Shipping Order in the correspondence basket for transmission to the office.

In the case of out-of-town shipments a duplicate Bill of Lading is made out, and this also goes to the office, and from there is forwarded to customer.

If the Stock-keeper makes a sale direct from stock, he makes out a Shipping Order without a register number, which order is also placed in the basket intended for the office. On receipt by the office of these Shipping Orders, etc., the register number of each which contains such number is looked up in the register and the date (and in large businesses possibly the hour also) of receipt by the office is noted in the column ruled for that purpose. Such orders as the Stock-keeper has filled without a register number are entered in rotation in the register, and the numbers thereof noted on their face.

The Order Clerk then selects such orders as, owing to a part shipment having been made, the balance must be transferred to another Shipping Order, or such as require Factory Orders to be issued for one or more items upon them. A back order is exactly the same as an ordinary Shipping Order, but is, of course, made out for such lines or quantities only as remain unsupplied, and are given the next blank number in the register exactly as though they were new orders.

Back orders are of the same color as the original from which they are transferred. For convenience in sorting or looking up a particular order, it is well to have them of an entirely distinct shade. This plan will be found better and more satisfactory than using four colors. A very satisfactory arrangement has been found to be the following:

Original city orders—cream color;
Back city orders—canary color;
Original country orders—pale blue;
Back country orders—medium blue.

On this system we have four distinct classes of orders, distinguishable at a glance. The fact yet remains that city orders are always yellow, and country orders always blue. This, of course, applies only to the Shipping orders; the Memo orders may be of any color preferred.

As back orders for balance of order or Factory orders for certain goods ae made out, the "original authority" for the Shipping Order is taken from the file, and the new numbers noted thereon.

The "original authority" for such orders as are completed is removed from the file, stamped with an adjustable date,

Shipment completed
22nd March, 1901,

and filed away in index boxes with the date of contents noted thereon.

The Order Clerk then selects such of the Shipping orders as he is

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unable to charge to the customer without knowledge of the cost of the article supplied. These he hands to the Pricing Dept. The costs of the orders on which the articles supplied were manufactured is at once made up and the shipping orders returned to the Order Clerk. These shipping ordrs are then arranged alphabetically; city and country in separate lots, and here will be seen the advantage of having the "original authority" for orders arranged in the cabinet alphabetically, instead of by travelers' route, or by district. The prices at which the various goods are to be billed to customer is then filled in by the Order Clerk, and the shipping order handed over to the Invoice Clerk, to whom has been previously delivered all duplicate Bills of Lading. By this clerk the extensions are checked, the entry and invoice number noted on the shipping order, and also in the register opposite the numbers of such shipping orders.

The shipping orders then go back to the Pricing Dept., where all the costs of the items shipped are entered in the column for that purpose, and the class of goods or division of stock which is to receive credit for the sale is indicated in the column for that purpose.

In the case under consideration let M represent goods manufactured by the firm, and P represent stock purchased from outsiders, and A, B and C the different classes of stock handled. The proper use of these letters in the columns devoted to that purpose would enable the Factory Accounting Dept. to show at the close of each month what quantity of the total stock shipped was purchased or manufactured stock, and also the value of the shipments for the month of the various classes of stock, both manufactured and purchased.

In the event of any stock being delivered and sent out for which no charge is made to customer, the regular routine is followed in every respect and detail, except that no selling price is extended on either shipping order, invoice, or Day Book entry. These are all made in the usual way, the invoice, however, being marked "no charge." This plan, carefully followed, enables the stock-keeper to make sure that no stock leaves his possession without being recorded. It remains for the Accounting Dept. to charge the value of such shipments as are not to be billed to a customer to the account to which they properly should be debited.

On the face of it this system appears to have considerable detail work which might be avoided. In practice it will be found not more than necessary, if the object is to keep track of all orders, shipments, and deliveries is to be obtained.

The Order Clerk must be particular whenever he receives an order from the Shipping Dept., for which no back order is required, to remove the "original authority" from his cabinet. If this "original authority" is then filed away separately, and distinct from other correspondence of the company, the Order Clerk can immediately procure all orders from a given customer. A glance on the face of these orders will show at once which are complete, and which are still remaining partly or altogether unshipped.

From the information on these orders, and the folios obtainable by reference to the register, the Order Dept. can turn up at once the Day Book entry for any or all items required, and from the register can also see at a glance if the order is yet uncompleted, whether it is in the possession of the Shipping Dept., awaiting fulfillment, or of the office awaiting prices and charging.

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CHAPTER V.

Billing and Charging.

The system which I have described may be used with an ordinary Day Book, the Billing Clerk simply making the entry in the usual way from the shipping order, the extensions of which he checks as he makes the entry, and afterwards writes out an ordinary invoice, the number of which he notes on the Shipping Slip.

A better plan is to use one of the several good forms of loose leaf Day Books, by which Day Book entry and invoice are made out by the one writing. The saving of time by this plan is considerable, but the greater gain lies in the fact that the Day Book being a loose leaf binder, the Invoice Clerk requires only such pages as may constitute that day's work, the previous charges are at the disposal of the Ledger-keeper, who should then be able to keep his posting perfectly up-to-date.

A loose leaf Credit Book should be kept on the same lines as the Day Book. The credit entry and note are made out, given the next consecutive credit number, which is noted on the Memo or letter under authority of which credit entry is made. Such credit memo or letter is then filed away with the completed shipping orders.

It is essential that neither shipping order nor credit note be made out for any amount or quantity without written authority, for such entry being in possession of the Order Department, and such written authority positively must under all circumstances be such that it may remain in possession of the order department, and not be required by any other department of the business.

CHAPTER VI.

Delivering and Shipping.

The chief idea in connection with the shipping and delivering of stock has been in all cases to keep an itemized record of articles delivered to invariably obtain a receipt for such, and to do this with the least possible amount of clerical work by stock-keeper or shipper.

As regards goods sold and delivered to purchaser or his representative personally in the stock-room, we have already seen how the Delivery Slip to accompany such goods, and the receipts for same are made out by the one writing with the Charge Slip.

For city shipments the Stock-keeper makes out similar Delivery Slips and Receipts—which the carter takes with him. The former is given the customer, and the receipt brought back by the carter. It will be noted that these receipts are perforated for filing on a binder. It is not necessary that they should be permanently put away in this form. Two binders may be kept in the stock-room, each containing receipts for one month. At the end of the second month the receipts are taken off the binder, and put away (labelled with the month they are for). The Stock-room will thus be always in possession of receipts for at least one month's deliveries,—older

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receipts than two months being filed away, labelled by the month, and thus easy of access.

The chief advantage of this plan is that the carter carries only receipts for the current day's delivery, so if he loses his book the loss is confined to as small a number of receipts as possible, also if a receipt for goods delivered on a certain date is asked for, all receipts of that date will be together, and there will thus be no necessity to look through several books.

Instead of the ordinary form of Bill of Lading supplied by carriers, many firms find it to their advantage to supply their own—even at the additional cost involved.

These Bills of Lading are padded in such a way that by the use of "full carbon" three copies are obtained. The first signed by the carrier remains in possession of the stock-keeper, and is filed away similarly to the receipts described above. The second, or flimsy, copy is placed in the stock-keeper's correspondence basket—thus reaches the office and is forwarded to customer, either with invoice, or for reference, by mail on the day shipment is made.

For deliveries to retail branch three slips are required. These may be made out with one writing. The retail branch being supplied cost price, plus a percentage for handling goods. Such deliveries are only a transfer, not a sale. The delivery slip and receipt are treated in the usual way. The Charge Slip goes to the Cost Department, where the cost is extended, percentage added, and the slip then handed to the Invoice Clerk. The Invoice clerk then makes out a Memo Invoice, but makes no book entry. This invoice is sent to the retail branch and the charge slip turned over to the accounting department. The book entries made from these charge slips will be described later.

CHAPTER VII.

Stock Ledger.

In a business such as we are considering the question of Stock Ledgers is both important and a much disputed one. The mere deciding between unwieldy and bulky books or, on the other hand, too many books of similar sizes requires some thought. The advantages of a stock ledger as a perpetual inventory, are but very small in actual practice, but it has advantages as a record of the salability or unsalability of various lines as shown by past transactions which can hardly be estimated. If a stock ledger is kept all entries for manufactured or purchased goods of a similar kind must be carefully kept apart, and to do this involves the disadvantage of keeping similar goods in different ledgers, or else the serious risk of confusing two classes of stock handled.

These ledgers are, of course, records of quantity only, not of values. At time of inventory an inventory sheet is used, and upon this form the inventory, as shown by the books, is taken. This form should be provided both for price and extension of values, and should approximately agree with a physical inventory of same date.

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If the costs of the various goods are noted on the accounts in the stock-keeper's ledger, a very close average will be obtainable at closing of the year's business.

Whether the information or results obtainable from a stock ledger are sufficiently valuable to justify time and labor required to properly keep them is a question each management must decide for themselves.

If kept, however, under no circumstances must a debit or credit entry be made without quoting the authority therefor. In this case, if physical and book inventories are far out of balance, adjusting same would only be a question of time, checking all entries, and granting that the inventory at opening of ledgers was correct, as also the year's charges and credits, the difference would then resolve itself into a simple question of stock taking or of shipping without charging.

In no department of a manufacturer's account does the old rule hold better than in this much disputed question of stock ledgers: If a thing is worth doing at all, it is worth doing well; if it is not worth doing well, it is not worth doing at all.

CHAPTER VIII.

Pro-rating Expenses.

The distributing or pro-rating of Shop and Factory expenses upon the cost of the goods produced is one of the most important Accounting questions a manufacturer will be called upon to face. He may install a necessarily complicated system by which some manufacturing expenses are pro-rated on the L. & M. cost of the article produced, some on the value of productive labor, some on the number of hours used, and some on the value of a given machine, the length of time it is worked, and its probable life. On the other hand he may decide on the simpler plan of lumping everything in General Expenses, and providing for such expense by a percentage on the gross direct cost of output. The days when the latter plan could be safely followed are past, and it is not every concern that could justify by the results obtained, the adoption of the former.

Before outlining any plan I would like to call attention to an important point which I think is frequently overlooked. There is a general impression that it is a safe and conservative plan to advance costs of product sufficient to cover other expenses than those incurred as a result of manufacturing. Some firms go so far as to provide for selling expenses in this way, so as to be "on the safe side." In the case of a concern manufacturing only for customers orders' and not for stock, or in the most improbable event of selling each year all product of such year, such a course, though wrong, might not be dangerous. In the case, however, of the company manufacturing and carrying stock, the danger of such a course is not limited to the question of wrong costs. It goes right through all the books, affects the balance sheet, and results in an inflated and misleading statement of the company's assets. To make this more clear, suppose an extreme case, using, for convenience, even figures.

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A furniture company make up a table at a prime cost of

Labor	$ 5.00
Material	5.00
	$10.00

The actual expenses incurred by the factory during manufacturing of this article are, say 100 per cent. on productive labor, thus giving an actual cost Ex. Shops of

Labor	$ 5.00
Material	5.00
Proportion of manufacturing expenses	5.00
	$15.00

Suppose the firm's expenses, other than the manufacturing, are one half the amount of what may be correctly called Manufacturing Expenses. This table would be charged to Stock at a value of

Labor	$ 5.00
Material	5.00
Proportion of expenses	7.50
Total	$17.50

If it were sold before the end of the year, Stock would be credited and Sales Account charged with- this value, and the difference between this amount and the selling price would be the correct profit, so that the error would have no result.

If, however, it were inventoried at this figure, the assets of the company would show $17.50, composed as follows:

Material	$ 5.00
Wages	5.00
Actual increase in commercial value on account of expenses which would be incurred to replace table	5.00
Fictitious increase of value owing to expenses incurred in order to sell	2.50
	$17.50

The first three items composing this $17.50 are legitimate assets, but the folly of including the last item as an asset is evident on its face. As long as funds held out or credit remained good, this plan liberally carried out, and the office and selling expenses figured at a high rate, any manufacturing business could be made to show a constant increase of assets, quite irrespective of either sales or profits.

The distributing of manufacturing expenses as a percentage on the L. & M. cost of an article is gradually being recognized as an improper procedure, and it is now generally admitted that the greater part, if not all of the expenses, should be distributed in proportion to the productive labor

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expended. Whether the amount so distributed should be as a percentage of the value of labor, or at a rate per productive hour, is not so easily determined. The advocates of each plan have strong arguments in their favor.

In the case of a concern using very expensive machines, which from their nature must lie idle a large part of the time, it would seem as though the output of such machine should bear a larger proportion of "burden" than the output of a cheaper machine being used regularly eight or ten hours per day.

Whatever plan is decided upon, it is well to remember that the value or inefficiency of any system depends largely on its being properly introduced on a correct basis.

Inventories of Manufactured Stores and Stock should be taken on sheets so ruled as to admit of pricing at two costs and extending two values. These sheets should show the values at the costs in use based on the old plan of pro-rating expenses, and also the value at prices obtained by taking the L. & M. cost as shown by the orders on which the articles were manufactured, and adding an advance thereto, based on the plan it shall have been determined to follow. The difference between these values must be closed out to Profit and Loss.

Inventory of Work in progress must be adjusted on the same lines, but because of part deliveries to Stores or Stock on account of uncompleted orders, more work would be necessitated, and the greatest care required.

Before beginning the Inventory of Work in progress, the actual uncompleted orders in each shop should be compared with the unfinished orders, as shown by the office records, and any differences adjusted. A statement should then be made at costs obtained by the method in past use.

A similar statement must be made up at what would be the costs and values if the new rates had been used. The difference must then be closed out to Profit and Loss. If this is not done, and the rate of advance is changed without providing for a corresponding change in the values at which manufactured stores and stock stand in the books, correct cost of manufacture cannot be secured. Some manufactured stores will be charged out to the manufacturing orders at a value which includes the old rate, and some at a value including the new rate adopted.

As regards stock, if values at which it stands are not adjusted, both sales accounts and also profit on sales will be wrong.

Changing the rate of advance without changing inventory value of both stores and stock will thus render inaccurate and unreliable the records of costs; of outputs of shops; of cost of sales; of profit on sales; and at the close of the year of stores and stock on hand. The records of costs of output would be misleading as long as the stores continued to use or issue any product manufactured prior to the change; cost of sales and profit on sales as long as any stock received from the shops before the change was charged to sales accounts, and the inventories would not be accurate until such time as every manufactured article, whether stores or stock possessed by the company prior to the change had been disposed of.

Generally speaking, all the expenses of a manfuacturing company may be divided into the following classes:

A. Expenses of receiving, keeping and handling stores.

B. Expenses incurred as a direct result of manufacturing such as superintendence, production of power, etc.

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C. Expenses attributable indirectly to manufacturing at factory, rent (or its equivalent), lighting and heating, etc.

D. Expenses of receiving, keeping and handling stock.

E. Selling expenses, such as travelers' expenses, and salaries, commissions, etc.

F. Commercial and administrative expenses (many items as salaries, insurance, etc., will have to be distributed amongst these expense accounts.)

A.—Expenses of receiving and handling stores should be provided for by a percentage advance on the price at which raw material is charged out and credited to stores. The amount provided in this way to be credited to an account called "Stores Cost Advance," which should be sufficient to cover all expenses of the stores department.

B. C.—Manufacturing expenses, both direct and indirect, should be provided for by either a flat rate per productive hour, or a percentage on productive labor, as determined. The amount so obtained to be credited to an account known as "Factory Cost Advance," and the credit to this account for a given length of time should be sufficient to cover all expenses properly coming under either of these heads during such time.

D. E.—Stock room and selling expenses are to be provided for by a percentage advance on the price at which goods are credited to stock, and charged to sales account. This amount to be credited to "Stock Cost Advance," and to be sufficient to cover all stock room and selling expenses.

F.—All expenses other than the above are charged to Profit and Loss, which account is, of course, credited to the profit on sales. Sales account will thus show the difference between actual cost of goods sold and the price at which they are charged to customers, or, in other words, the actual "Profit on Sales," leaving to Profit and Loss account its correct function of showing the net profit or loss, as the case may be.

If this plan is adopted on a very careful estimate, based on the records of previous years, the various cost advance accounts should closely balance with the expense accounts which they are intended to cover. Any slight difference should be adjusted from time to time, not directly to Profit and Cost, but through an account which might be called "Cost Advance Adjustment Account," which should ultimately be closed out to Profit and Loss. This for record only, in order to ascertain how much the Cost Advance Account may exceed or fall short of the amount required to offset expenses they ought to cover. Absolutely correct rates of advance could not be expected for the first year, when they would, necessarily, be largely based on estimates.

In most manufacturing concerns advertising should be treated as a selling expense, and the correct proportion charged out from month to month, according to the time covered by the contract of payment. In certain cases it might be treated as an investment, to be credited with a percentage on the sales which it causes. This, however, comes more under the scope of an Article on Advertising Systems than on Manufacturing Accounts.

In a very large concern, instead of any Factory Cost Advance Account, there should be one for each productive department, based upon the amount of product, and the expenses of each department, and a proportion of general manufacturing expenses.

In no department of a manufacturing business can loose papers and

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cards be used to greater advantage than in the retail, and particularly is this the case when the actual accounting is done at another office. Under such circumstances the book-keeping at the retail office resolves itself into promptly forwarding to head office all necessary data and information —retaining only such records as may be of value to the retail management. A retail department can undoubtedly be operated to greater advantage when those responsible are in a position to keep a close watch from month to month—not alone on the amount of sales, but also on the amount of the purchases, stock on hand and the operating and maintenance expenses, and the proportion such amounts bear to one another.

In the following pages where card forms are given "6x4" is assumed, unless otherwise specified. The size adopted should, however, as a general rule, be the same as that in use in the office where the actual accounting is done.

Such lines of stock as require close watching are kept track of by one of two forms of Stock Cards (Forms 301, 302).

Form 302 is so ruled as to show quantities on hand at certain periods. It is used for such goods as are in constant and fairly regular demand and which are regularly procured from a source which it is known can supply them in a given length of time. At such regular intervals as may be found best these cards are taken by the stock-keeper and the stock on hand noted thereon. The specimen here given provides for weekly reports of Oil Cup No. 1018. The quantity of stock being noted, the cards are handed to the

THE M. R. CO, RETAIL STOCK CARD 6x4

Glass Oil Cups Fig 1024 Sell at — — —
SALES AND RECEIPTS

No	Qty.	No	Qty.	No	Qty.	No	Qty.	No	Qty	No	Qty	No	Qty
		Ford.		Ford.		Ford.		Ford		Ford		Ford.	
					Form	301							
Ford		Ford.		Ford.		Ford		Ford.		Ford		Ford.	

manager, who examines them, and referring to the record of goods on order, governs himself as seems best.

Form 301 shows each receipt or issue of the article—the former in black ink, the latter in red. The column on this card headed "No." is used to indicate the number of the page or invoice from which the entry is made. A list is kept in a convenient place of such lines of stock as have been given stock card 301, and salesmen enter such articles as sold or received in a book provided for that purpose, and from which the entries are made on the card.

Occasional city purchases—i. e., such purchases as may be found necessary from time to time, but are not actual purchases for stock, are made by a purchase order similar to Form 104, and the accountant is authorized to charge the retail department with such articles by means of a Retail Department Voucher (Form 303). These vouchers—6"x4"— are bound in book form, numbered in duplicate. They are written out with carbon

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paper—the copy is a card and is perforated for removal, and transmission to head office, and is the accountant's authority for all charges against the retail branch, except those for goods supplied direct from the factory or expenditures made by it on account of Retail Department.

These vouchers are made out, their number noted on the invoices covered by them and sent to the accountant at such intervals as may be found most satisfactory and convenient. The blank column on the right hand side of this form is used for the manager's signature on the card which

THE M. R. CO. LTD. RETAIL STOCK CARD 6x4

	Glass Oil Cups Fig 1018 STOCK ON HAND								Sell at - - - -
Size	1 Jan.	8 Jan.	15 Jan.	22 Jan.	29 Jan.	5 Feb	12 Feb	19 Feb	26 Feb	
3	6	4	4	4	3	2	6	5	5	
3½	8	8	6	6	6	5	4	4	1	
4	6	2	6	4	10	10	10	9	4	
4½	6	4	0	0	6	6	6	6	1	
				Form	302					

goes to the head office—on the paper copy remaining in the book it is used to carry forward the total amount covered by vouchers up to date. This book should be kept indexed up to date, the voucher number being also the page number.

THE M.R.CO.LTD. RETAIL DEPT. VOUCHER 6x4

Date - - - - - - - - - - No 7 - - -

To Accountant

Please charge our accounts as follows

Invoices herewith, quality, price and extentions correct.

Sgd. - - - - - - - - - - - - - - - - - -
MGR. R.D.

Name to credit	Stock	Exp				Total	

Form 303

Regular stock required either from factory or other sources is ordered by means of a Retail Stock Order (Form 304). These orders are put up in pads numbered in duplicate, the original of paper and the copy-card. The latter is filed away in a card index, classified according to supplier's name or class of goods, as may be found best. On receipt of acknowledgement of order (not required in case of the factory), the promised date of shipment is noted on the card. When goods are ordered from other sources than the factory the seller is given a form called Retail Debit Note (Form 305), and

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the order is only given on condition that this form is filled out and enclosed with the invoice to head office.

In cases where goods are purchased through travelers a copy of the order is obtained and pasted in a guard book, and a regular purchase order (Form 304) is made out, covering "goods as per copy of order filed in Guard Book No. ———— page ————."

On receipt of Form 305 with invoice by head office, the proportion of charges (freight, duty, etc.) on each item is entered in the proper column, and the total cost extended. The debit note is then sent to Retail Department, by which it is treated as an invoice from Factory for the gross amount on its face. It is not, however, charged to the Retail Department, nor the invoice which it represents passed to credit of supplier until certified correct by a Retail Department Voucher (Form 303).

When the goods come to hand the debit note is checked and the Purchase Order Cards (Form 304) removed to another drawer and arranged according to goods.

The accountant is then duly authorized by Voucher (Form 303) to charge Retail Department with the amount of invoice and charges on same as shown on the Debit Note, the number of such voucher being noted on its face. It is then filed away on a binder, paged and indexed, the page number being noted on the corresponding Purchase Order.

It will be seen that should a new manager be called upon to take

RETAIL STOCK ORDER

Date_____ No._____

Ordered from._____

To be Shipped via_____

Acknowledged._____ Shipment promised_____

FORM 304 DUPLICATE CARD 6X4

charge, he will have immediately available full information as to the purchases of his predecessor. The Purchase Order Card (Form 304) will show the date and quantity and by whom supplied. It also shows the Debit Note number, which has now become a page in a bound book, and on which he will find an exact copy of invoice, and also the charges to lay the goods down in stock—in other words, the price and the cost.

If information regarding small city purchases should be required, the indexes of the duplicates of vouchers issued will enable him to supply the head office with the date and name of supplier, when they can readily look the invoices up. The original of the retail voucher is retained by head office and filed away numerically. It will thus be seen that any desired change for stock purchased for the retail department can be at once looked up from either name of article or supplier.

Stock sold to city customers or to Factory is entered on a Charge Slip (Form 306). These slips are numbered consecutively and are padded with Delivery Slips (Form 307) and Receipts (Form 308), bearing the same number. The Delivery Slip is of tough "flimsy" so that by using "full" car-

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bon the three forms are made out with one writing. Reference will show that Nos. 307 and 308 are perforated about 1½" from the left hand side. The information appearing in this space should not be required on these forms. This plan is adopted to allow the filling of prices, etc., on the Charge Slip before removing the forms from the pad, and to insure all charges reaching the invoice clerk. After removal this portion of Delivery Slip and Receipt is detached and given to the invoice clerk, and are retained by him until the original charge slip has been priced and reaches him, when he makes the entry, noting the invoice number on the slip.

The delivery slip and receipt are sent out with the goods, the one to be retained by customer, the other signed, brought back and filed away. The charge slip goes to the office.

As regards shipment to out-of-town customers, a Charge Slip (Form 310) with a "flimsy" copy and a Shipping Advice Note (Form 309) are

RETAIL STOCK ORDER

Date _____ No. 0927

To _____

Please ship to us at _____ as follows _____

Ship via _____ Sgd. _____

Please acknowledge this order quoting above No. and state when you will ship.

FORM 304 original paper 8X4

used. Instead of being padded these are bound in a book, the "flimsy" remaining, and the other two removed. The perforated slip removed from the advice note is treated as the slip taken off the Receipt (Form 308), viz., as a check against omitting to make a charge for goods shipped or delivered.

The Advice Note is either enclosed with the invoice, or if impossible to forward invoice same day as shipment, it is mailed by itself. In case of delay in getting out invoices, this gives the customer prompt advice and full particulars of shipment, except price, and enables him to check and stock his goods immediately on receipt, without having to await an invoice.

If through any cause a charge slip fails to reach the invoice clerk, the slip detached from the receipt form or shipping advice note being in his possession will, by its number, call his attention to the face, and the matter must be traced up. If the charge slip is actually lost, a duplicate can be obtained by referring to the receipt file, or to the flimsy copy of shipping advice note bearing the required number. Thus all possibility of a recorded shipment not being charged is eliminated.

On receipt of the charge slip in the office the prices and values—both cost and selling—are filled in. The entry is then made in a loose leaf day

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book by means of which invoice and day book entry are obtained with one writing. The invoice number is noted on the charge slip, which is then

RETAIL DEPT. DEBIT NOTE

THE M. R. Co. LTD. No.

Gentlemen, Date

We bill you today on acct. Retail Dept. in fulfilment of their order No. dated as per enclosed invoice, Copy of which please find below.

Shipped Via Yours truly.

Margin for Binding

Copy of Invoice	Chgs. Leave this blank	Total	Remarks
			Do not write in this space

FORM 305

filed away on a binder, arranged numerically according to such number, the totals, both cost and selling being listed from day to day, and added up at the end of the month.

RETAIL DEPT. CHARGE SLIP, CITY

No. Date

Sold to.

Address

Sold by Forwarded by

No.

Terms

Remarks

Inv. No.

Article	Cost @	Cost Value	Sold @	Sold Value

FORM 306

The great advantage of this system is that it enables the head office to be promptly supplied with all the pages of the day book, except those of the current day, thus keeping the posting up to date, without the constant sending of the day books back and forth, and the consequent loss of time. At the same time if a customer makes any inquiries of the Retail Department regarding past purchases the Charge Slip is a copy of the day book entry, and can be at once looked up, either by invoice number or by date.

All accounts being payable at head office, the handling of cash by Retail Department is a small matter. The simplest way is to keep a Petty Cash Book, and forward to the Accountant a daily report of all receipts or disbursements with vouchers for the latter, taking a receipt for such vouchers. The entries are put through the regular cash book at head office in the usual way. At the close of the month the accountant is notified by the manager of the Retail Department of the total cost of his sales, as shown

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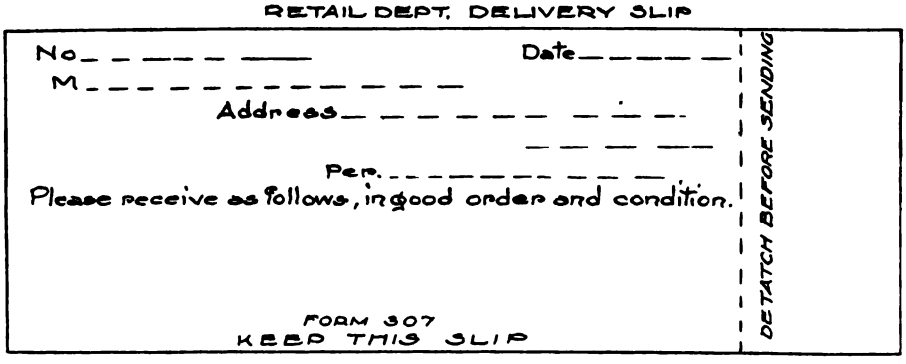
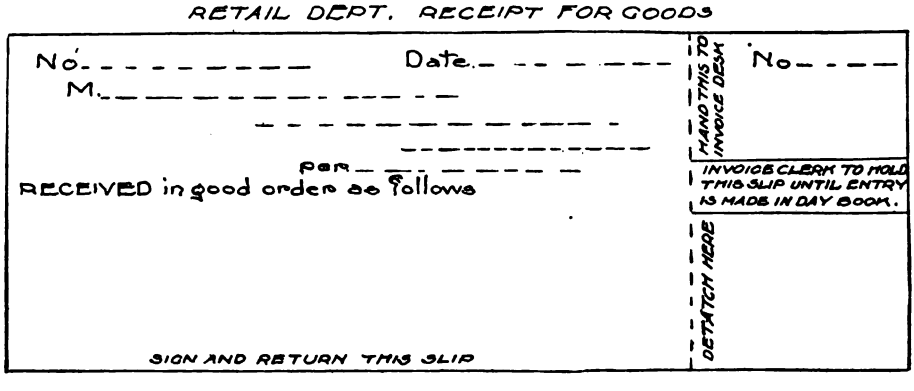
by the binder holding charge slips for the month. All other information required by the accountant for the proper treatment of the accounts of the



Retail Branch is either originally in the possession of Head Office, or has been forwarded from the Retail Department from day to day during the month on the lines described—returns from customers being treated on the



same systems as sales—"credits for goods returned" taking the place of Charge Slips, and a loose leaf credit book that of the day book already described.

As will be shown later the accounting system used provides for all entries against any of the Retail Department Accounts going through a Transfer Entry Book instead of being posted directly to such accounts from the various books. The Cash Book alone is an exception to this rule. At the close of each month the manager of the Retail Department is supplied with a copy of all Transfer entries affecting his department, including, of course, what proportion of general expenses may have been decided upon, and also with a memorandum of all cash entries, charging or crediting any of his accounts.

For his own information and guidance, not as a matter of book-keeping, he keeps a small ledger containing the following accounts:

Retail Stock.
" Expenses.
" Sales.

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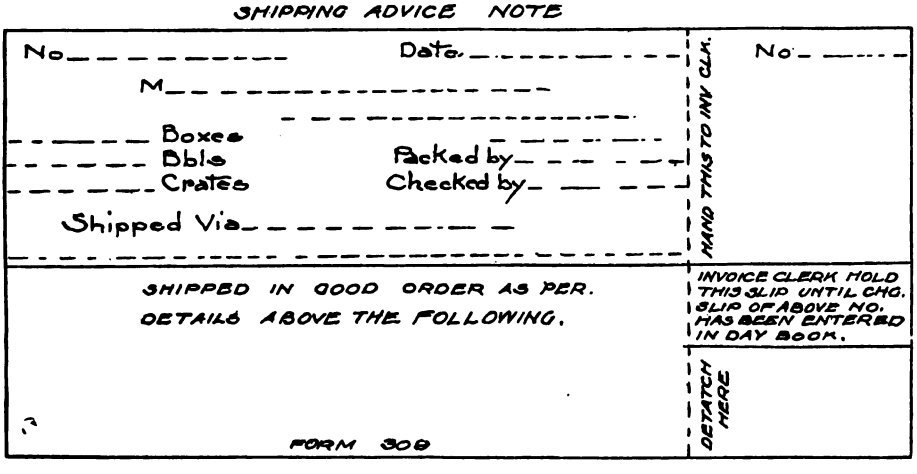
" Returns from Sales.
" Revenue.
" Accounts Collectible.

and what few others may be required, and also an adjustment account called Head Office.

At the beginning of the year "Head Office" is credited and Retail Stock debited with the amount of inventory. From month to month as the Transfer Entries are received from the accountant they are posted to the accounts in this ledger—Head Office representing all outside persons, except customers to whom goods have been sold. Head Office Account thus represents the total purchases of the Retail Department. Sales Account being charged with the cost of stock sold, plus a percentage sufficient to cover expenses,



and credited with the price charged customer, the difference will represent actual Profit or Loss—the profit or loss on each individual sale being shown.

The amount of percentage added to cost of goods sold is credited to Retail Revenue Account, and should be sufficient to cover all expenses in a given length of time. Of course, it cannot be gauged exactly, but at close of year all expenses are closed out to Revenue, and the balance of that account then transferred to Profit and Loss. As has been stated, this plan will result in each sale standing on its own merits, its profit or loss being shown on the face of the Charge Slip (From 306 and 310).

At the close of each month a statement (Form 311) is taken off. A statement is also made on the same form showing total debits and credits from the first of the year up to date, instead of the monthly totals. A series of such statements for even one year will give most valuable guidance for future actions. Their value, however, can be greatly increased by a supplementary statement showing the percentages the various amounts bear to one another. A close watch must be kept upon revenue and expense accounts, to see that the rate of advance at which stock is charged out to sales is neither too high nor too low.

I know that many managements prefer to keep as much as possible such details as expenses and profits of departmnts even from the manager of such department. In many cases they do so to their own injury. A man

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competent and qualified for the position of manager of the Retail Department should possess the entire confidence of his employers in regard to that

CHARGE SLIP FOR COUNTRY SHIPMENT

	No._____ Date_____ Name_____ Address_____ ___ Boxes ___ Bbls. ___ Crates Packed by_____ checked by_____ Shipped Via._____	No_____ Terms_____ Sold by_____ Remarks_____ Inv. No._____
	ARTICLE	COST: Price / Value — SOLD: Price / Value
	FORM 310	

department, otherwise he is only nominally manager. To use best judgment and and obtain best results requires fullest information as to the outcome of past actions along the same lines or under similar conditions. De-

RETAIL DEP'T. STATEMENT MONTH OF

Folio	Account	Monthly Totals Dr	Monthly Totals Cr	Balance Dr	Balance Cr	Remarks
	Stock					
	Expense					
	Sales					
	Returns					
	Reverse					
	Accts. Coll.					
	Head Office					
	FORM 311					

cisions proven unwise by their results are often condemned, in the light of such results, as poor judgment, when in reality they were formed upon the soundest possible judgment, in view of the limited and often misleading informatiin upon which they had to be based. K. FALCONER.

CHAPTER IX.

Electric Manufacturing Co.

It is not claimed for the system herein described that it is perfect in all its details, nor that it is as thorough in its operation as a more elaborate system might be. Nor is it claimed to be entirely new or different from other plans for obtaining factory costs. It is merely the result of an effort to adapt features of other systems to local conditions which it has occurred to the writer may be very similar to those confronting other readers of The Book-Keeper. On that account it is hoped this may be of some interest.

It might be well in the beginning to mention some of the conditions for which we have attempted to provide. In the factory where this is in operation we manufacture electric dynamos and motors and have a line of about

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thirty different sizes of frames, on each of which is built machines of three standard voltages and three speeds to each voltage. The limited capacity of the factory (employing 100 men) makes it difficult to work up parts for stock on such a large line of machines, most of the work being done after machine is sold. Some of the smaller parts, however, are made in quantities, and a good many more are interchangeable, being used on machines of different sizes. These parts, after having been completed for one order, are liable to be "stolen" for use on another. In addition to a large line of standard machines we also do a great deal of special and repair work, and make a great many special tools, etc., for our own use. An extensive use of the apprentice system also causes labor costs to vary, as a handy apprentice can do a piece of work at much lower cost than a regular workman or an apprentice who has just been put at that particular work; and it is plain that under neither of these conditions alone could be obtained reliable figures for labor costs.

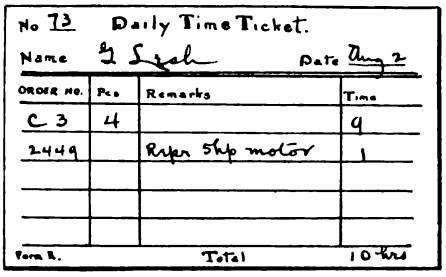
Besides providing for these and other conditions, it was necessary to arrange a system that could be taken care of by the book-keeper at such times as could be spared from his regular work.

The first step taken was to classify and number the different parts of the various machines. In doing this we indicated the sizes by letters and the parts by numbers. The iron and steel castings which are the principal parts, were given the first numbers, while the copper, brass and bronze castings were given the next larger numbers, leaving, of course, sufficient blanks for possible changes in design and construction. These letters and numbers are cast on the parts. Thus "A1" is the base for smallest size machine, "B1" the base for next larger, "A2" the frame for smallest machine, etc.

For machines for special purposes we double letters—thus for motors for driving printing presses "PA" represents the smallest size, "PB" the next larger, etc. In cases where more than one pattern is used for any one part, those not standard are represented by adding a lower case lettr to the number of the standard part, thus "Ala" is a special base for the smallest machines, etc.

Forgings and other parts which cannot have numbers cast on them are given still higher numbers, thus "A160" is the shaft for smallest machine, "B125" is 500-volt field winding for next larger, etc.

Now, for recording time we use a "Daily Time Ticket" as shown in "Form A." Each man turns in one of these tickets every day, and after it



No 73 Daily Time Ticket.

Name G Seal Date Aug 2

Order No.	Pcs	Remarks	Time
C 3	4		9
2449		Ripr Ship motor	1
Form R.		Total	10 hrs

has been inspected by the foreman as to the order numbers used and compared with the time as shown by the automatic time reigster, it is posted

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to cards as shown by "Form B." So far as possible all time is charged directly to the part on which labor is performed. Assembling, painting and other operations of like character, where several parts are involved, each have a number to which is prefixed the letter representing the size of machine, thus "A175" is assembling smallest machine. For special and repair jobs, making tools, etc., arbitrary shop order numbers are issued. For the various "shop expense" items such as repairs on tools and machinery, sweeping and cleaning, etc., regular standing numbers are provided. For each of these various parts, operations, special and standing orders a "Form B" card is filled out and filed under index cards for immediate reference. Where it is thought desirable to know the cost of different operations this can usually be determined by the names of the workmen, as shown by the card, or the different operations may be represented by different numbers. Where one is sufficiently familiar with the rates of different men some time may be saved by using rates instead of names and posting together all time of different men getting the same wages.

Besides having the numbers of the different parts indicated on the working drawings, complete lists of sizes and parts are kept posted conspicuously through the shop, and the men soon become thoroughly familiar with the numbers. This lessens the risk of time being charged to wrong numbers, as is so apt to be the case with a system using purely arbitrary numbers changing with every order.

An ordinary weekly time book is used and totals posted directly from this to labor account until the close of the month (or any other period desired), when the totals of the various "expense" items, and orders for new tools and other additions to plant and equipment for the month as shown by Form B are transferred to the proper accounts. This leaves "labor" account showing the net amount paid for labor which is charged directly on Form B to either part or operation numbers or orders for special repair work (aside from those items that pertain directly to factory equipment). In other words, after this transfer has been made, labor account shows only the net amount of "productive" labor. The cards for special and repair

Number 63 | Description Standard Pistols | Date Begun 4/1 '01 Completed 5/1 '01

Workman	Time							Total	Rate	Amount
Jones	3½	7	2	4¼	3			14¾	20	3 95
Mayhew	9	2¼						11¼	25	2 81
H Lesh	6½	3	9	1¼	½	3	7	30¼	05	1 51
L Anderson	4	4	4	4	4			20	12½	2 50
Baker	3	7	2¼	1	½	4		18	05	90
Form B					Total					11 67

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work are removed from the active files as soon as completed, while those with the standing numbers for expense items, as noted above, are renewed at end of each month.

Now, on the date when we were ready to put this plan into operation, we took a complete inventory of all finished parts on the premises,—whether in the stock room, in the testing room, or on the floor of the machine shop, whether in a completed machine or on a shelf did not matter. This inventory was taken on sheets like Form C. These sheets were then classified and filed for future use. On and after that date, as explained before, all work on any part was charged by the workmen to the number representing that part and posted to Form B at the convenience of the book-keeper.

Also beginning on the same date we have a card record (Form D) of

Frame B	Date 4/1 1901	Labor		Labor		Labor	
Part Number	Number Finished	Date	Cost	Date	Cost	Date	Cost
1	3	7/15	9/024	9/15'01	3/137		
2	2	7/15	5/22.0				
3	2	9/1	09/1150	9/15 0	27/125		
4	—						
5	7	9/	1 7/60				
5a	7	9/15	1 9/111				
6	4						
7	—						
8	—						
152	#5	7/10	27/157				
153	—						
160	4						
161	4						
162	4						
170	--						
171	6	7/20	9/4 29				
175	3	7/10	1 7/[illegible]				
Form C							

machines and parts sold. This is compiled from the sales book and of course does not include parts sent out to replace defective work, etc.

Blanks like Form E are also filled out regularly covering periods of one, six and twelve months. Besides being interesting as comparisons of different periods this form gives us the per cent or proportion to add to net labor costs for expense.

The method of obtaining labor costs from the equipment we have now gathered together can best be made plain by an illustration.

Suppose the plan has been in operation four months and it is desired to know the labor cost of "C3" for that period. The stock-keeper or foreman reports eight of these finished in stock. (By in stock we mean all that can be found in the premises, whether in the stock room or elsewhere). Our first inventory shows two of these on hand, while our Form D record of sales shows that sixteen have been sold in the interval. This indicates that

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twenty-two have been finished in the period covered and on figuring Form B for the same period we find they have cost $11.67, or $.53 apiece. This result is then recorded on Form C as indicated, and when at any future time it is desired to obtain new figures on this part it can be done in the same way and an average obtained either from the date of the original inventory or date of last figures. Thus if on a later date we ascertain that there are nine on hand, and our record of sales shows that twenty have been

DISBURSEMENTS Jan 1 - June 30 - 1901

Plant & Equipment					
	Machinery	1523			
	Tools	539	20		
	Fixtures &c	121			
	Patterns	249	72		
	Drawings & Specif	714	19		
				3237	12
Shop Expense					
	Engine Room	1389	12		
	Supt. & foremen	1492	60		
	Repr Mach.	122	10		
	Tools	312	10		
	Other Labor	1116	22		
	Misc	193	39		
				4965	53
Genl Expense					
	Rent	900			
	Salaries	2660			
	Office Exp	540	25		
	Freight	729	13		
	Insurance	255			
	Trav Exp	430	25		
	Commission	395	97		
	Advertising	658	25		
	Misc	329	10		
				6787	95
Labor				14249	17
Form E					

sold, it is evident that five have been finished since date of last figures, or twenty-seven since original inventory. Form B shows the labor for this last period to be $3.18, or $0.63½ apiece, while the cost for the twenty-seven would be $14.85, or $0.55 apiece.

When total cost of a given machine is required, it is readily obtained by adding to the sum of the costs of the various parts the cost of erecting, painting and similar operations as found by the same method.

For convenience in recording results and obtaining totals and comparisons of different periods we use a card like Form E, one of these being filled out for each part and the whole group properly classified and indexed for reference. Where a part is used in more than one machine its card is filed under the machine for which originally intended and a plain card of a different color is placed in its stead under each of the other headings. These plain cards contain only memorandums referring to the location of the original card. At the end of each group or machine is placed a "Miscellaneous" card, giving a list of material used on that machine not covered by

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the regular cards,—such as screws, bolts, paint, boxing and packing material, etc. The last card in the group is a "Recapitualtion" card like "Form G." This form is self-explanatory and is filled out as often as changes in

Frame 6	Slow Speed			Inter. Speed			Mod. Speed			Parts.
	110V	220V.	500V.	110	220	500	110	220	500	
Jan										
Feb										
Mch										
Apr	1	2						1		1 - 110 Volt SS Armature
May	4									
June		3			1.					2 Pulleys
July		4.								
Aug			1				3			1 Base
Sept.										
Oct										
Nov										
Dec										
Total										
Form D										

price of material, design of machine, methods of operation or the desires of the firm may necessitate, the old cards, of course, being preserved for comparison when new are filled out.

The per cent added to labor footing on Form G is of course obtained

Piece No. 63	Name Pedestals		
Drawing No 1775	Made for 3 hp Motor		
Old Pat. No 822	Used also on 4½ " "		
Tool Nos. 14	" "		
" 22	" "		
"			
Material C.I.	Labor		Remarks
Gro. Weight 22	8/1.01 .53		
Price 03	9/1.50 01 .55		
Cost 66			
Extras one 08			
Labor			
Total			Form F.

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from Form E for the same period. I presume there will be some of the readers of The Book-Keeper who will criticise this, because no distinction is made between "general" and "selling" expense. It is hard for us to make this distinction, as we have no regularly organized sales department, this

Frame A	Machine 1/2 hp. 110 Volt Motor							Date Aug 3/01	
		Wt	Pr.	Material		Labor		Total	
	Iron Castings	45	03	1	35	2	45		
	Brass "	4	20		80	1	12		
	Shaft B	1/2	28		14		35		
	Armature Core	5	340		19	1	47		
	" Shaft				05		11		
	" Coils			1	01	1	72		
	Commutator Bars			1	45	1	63		
	" Mica				25				
	Field Cores				60		32		
	" Coils			4	10	1	03		
	Rheostat			3	50				
	Pulley				13		61		
	Assemb and Misc			2	70	6	22		
	Total			16	27	17	03		
	Shop Exp 35%					5	96		
	Gen'l " 48%					8	17		
	Depr & Bad Ac 6 1/2%					1	11	48	54
Form G.									

part of the business being attended to largely by the officers of the company in connection with their other duties. However, where conditions will permit, the system can easily be adjusted to make the distinction between these two items. The last item on Form G, "Depreciation and Bad Accounts," is figured on the basis of the record for the previous year and is added more as a memorandum to comply with the desires of the firm that the card show the complete and total cost of marketing the machine and handling the account.

It will be noticed that this system is based on averages all the way through, and that the labor on parts that are junked after being partly completed, because of defective work or material, is automatically pro rated and added to cost of parts that are used. We also find we get the time more correctly recorded and at a great deal less expense than under the system of issuing arbitrary shop-order numbers, as the men nearly always have the numbers before them on the drawing and casting, and in other cases each man has only a few numbers to remember, and they do not change. Besides being more accurate, this saves very much time both for the men and for the foreman, and also removes the temptation to "load" the time onto the general numbers in order to cover up defective work or forgotten numbers.

Another feature of this system that will commend itself in a great many cases is that fact that the work can be kept up at one's convenience. Afer the Daily Time Tickets have been compared with the time register and checked off to see that all are turned in, they need not be posted until it is

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found convenient, and if there is not time enough to attend to the whole system, part can be left out without detracting from the value or correctness of the part kept up. For instance, if one or two machines or lines are thought sufficient and satisfactory, the time spent on that portion of the work need not be posted.

As intimated in the beginning, we believe the principles of this system can be adapted to other lines of manufacturing where similar conditions are to be met with the same satisfactory results we have experienced.

A. C. WARD.

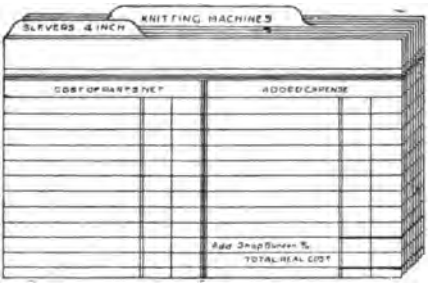
CHAPTER X.

Cost Cards.

The intention of this article is not to outline a specific system for ascertaining exact factory costs.

Instead it simply suggests a general plan for such a system and is rather an exposition of the superiority of card systems over books for this particular form of accounting.

So broad and general is the suggested plan that modifications and additions must be made to fit it for any business adopting it.



The principle of the system is the accumulation on cards as shown in Figure 2 of the cost of various operations by parts. Then on cards similar to those shown in Figure 1 the totals of the former cards are assembled and the fixed expenses added.

The reader will note that the cards shown in Figure 2 are filled out with only the operations entering into the manufacture of the certain parts represented by the card. In an ordinary bsuiness it is of greater convenience to write the names of the various operations than to have their names or numbers printed, for the operations on the different parts vary to such an extent that many different forms would be required.

The details of cost may be further divided, especially in computing costs of large and special machinery, by allowing a card for each operation and carrying the totals to the "part" cards (Figure 2). These "operation" cards may be filled out direct by the workman and are made of cheap but durable material. If a satisfactory system of collecting items of cost from the workmen is already in use, the "operation" cards may be omitted and

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the data for the "part" cards secured from the ordinary sources or from foremen's estimates.

The greatest gain in arranging costs on cards in place of books is the ease with which changes can be made. For instance, if the metal is changed in character or weight, the time required for the operation is lessened, or any other change occurs to effect the cost of the part, only the card representing that part is changed and this is simply removed from the file and replaced by a corrected card.

For this reason the cost records are always complete and up-to-date.

In case any operation or part or article is abandoned, it is very simple to remove the proper cards and place them in a transfer file or destroy them entirely. From the old cards, provided they are transferred, calculations can be made of great assistance in the conduct of the shop.

Cards are preferable to books for still another reason—the ease with which the card representing any article or part may be found. By means of guide cards the record cards are so arranged that any one desired may be found instantly.

The ½ cut guide cards make divisions of the principal classes, and each class is further subdivided into specific articles or sizes by means of ½ cut guide cards and into the various parts themeselves by means of ½ cut guide cards. Different parts are sometimes designated by number.

The record cards representing the articles are of a different color from these representing the parts, and in case record cards are also used for records of operations these cards are of still another color. The superintendent or any other interested person loses no time in consulting the files.

When the card plan is used there is no limit to the growth of the system. In a growing manufacturing concern a book soon becomes useless because it is filled with old and dead records which cannot be removed.

Then it is necessary to recopy the live records and plan a larger book. In a card system new matter without limit may be inserted in its proper location without disturbing the present records.

To a particularly careful management desirous or exhaustive records and of exact summaries, the cards are especially suited. Each card being a unit of record, it may be changed from place to place in the index, thus furnishing the same information in different connections. For instance, the cards may be filed by dates and thus represent the total amount of work done in the shop in a definite interval.

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When this interval is completed the totals of all the cards may be taken and the cards themselves refiled through the regular index outlined above to again yield up their information in a different connection.

The economy of a card system is such that the entire cost is more than covered by the saving in clerical labor.

This is more particularly demonstrated when a shop has been in the habit of paying overtime for accumulating similar records with cumbersome book systems. With the book system the work must be kept up evenly in dull and busy times, but with the card system the records can be made during the busy time and the cards arranged and the summaries drawn up in the slack season.

A. W. SHAW.

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PART IV.

Municipal Accounting.

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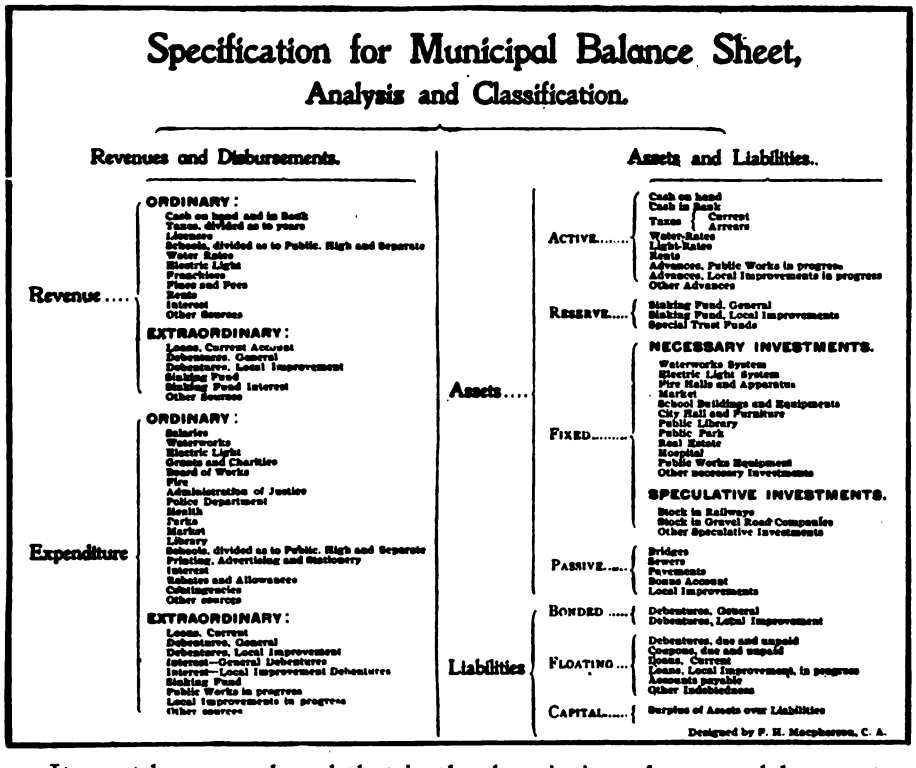
Specification for Municipal Balance Sheet.

CHAPTER I.

IN THE specification on this page will be found an analysis and classification of the several items which enter into the accounts of the average municipality; and if followed in principle, the treasurer will be enabled at all times to furnish a complete and satisfactory presentation of the standing of the corporation. The analysis of accounts which is herewith presented in chart form, is that which is required where the balance sheet is made an integral part of the system of book-keeping.



It must be remembered that in the description of any model or system, it is essentially necessary to include more in items and detail than will be found requisite in any one municipality. If the illustration is to be of any service it must of necessity be exhaustive and complete in all its details, local conditions governing as to selection in individual cases.

ASSETS.

The assets are again subdivided into four classes—active, reserve, fixed, and passive.

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Active assets comprise cash, which includes the amounts in the treasurer's hands, and the balances due from the bank on account current; taxes current, outstanding; tax arrears, outstanding; water rates; electric light rates; rents; advances on account of permanent public works or local improvements; and miscellaneous.

Reserve assets include sinking funds on general, or local improvement accounts, and other specially invested funds.

Fixed assets are subdivided under two heads, viz: necessary investments, and speculative investments. The first includes all permanent investments, as waterworks system; electric light system; fire hall and apparatus; market; school buildings and equipments; city hall and furniture; public library; parks; real estate; public works equipment; and other investments of a like nature. The second includes stock held in railway or gravel road companies, or such other enterprises of a public nature as are permitted by statute.

Passive assets represent investments which, while somewhat permanent in character, are intended to be written off as the debentures issued to cover the cost thereof are redeemed; the life of the work and of the debentures intending to be concurrent. In this class is also included the item of local improvements, of an amount equal to the debenture indebtedness outstanding on that account, an annual reduction being made, equivalent to the yearly redemption of debentures. Advances by way of bonus also come under this head, the amount to be written off annually running concurrently with the retirement of the debentures which produced the original amount of the bonus; in cases where certain conditions, as, for instance, the employment of a certain amount of labor, are involved, then the sum to be written off annually will depend on the extent to which the stipulations upon which the granting of the bonus was based, have been fulfilled.

LIABILITIES.

The second division of the balance sheet—the liabilities—is divided into three classes, viz: bonded, floating, and capital.

Bonded liabilities is subdivided under two heads, (1) debentures, general, and (2) debentures issued on account of local improvements, this latter being a direct liability, but secured by collateral.

Floating liabilities comprise debentures due and unpaid, coupons due and unpaid, loans current, loans on local improvements in progress, and accounts payable.

Capital liability represents simply the surplus of assets over liabilities.

REVENUES.

The municipal revenues for each year consist of the debts accruing due by levy or otherwise from all and sunudry to the corporation, although these may not necessarily be collected within the period. Land taxes, water rates, electric light rates, licenses, school grants, and fines and fees, form the ordinary sources of revenue; while the extraordinary revenues are derived from sale of debentures, temporary loans, sale of public property, franchises, and the like.

The details of the various sources of revenue having been ascertained, they should at once be made a matter of record, in books especially designed for the purpose, with such accompanying particulars as will, either at the present or in the future, give all needed information. These records are in the form of registers or rolls, as the tax roll, water rate roll, electric light

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roll, license register, market fees register, and such other books as are found to be necessary or convenient to cover the various forms or sources of revenue. All these registers or rolls should be susceptible of proof as to clerical correctness within themselves, the better plan being by the use of the columnar system of debits and credits. Accounts for each roll should find a place in the general ledger, the sum of the debits being entered at one operation. The counterbalancing entry will be to the credit of "revenue account." After the credits, in the form of collections, rebates, allowances, etc., are entered, the balances will represent the amounts appearing opposite the various items in th statement of assets, and should agree in each case with the amount of the outstandings appearing in the various rolls.

EXPENDITURES.

Ordinary expenditures are such as are incurred in the daily conduct and maintenance of municipal government, otherwise called operating expenses. The extraordinary expenses are in the nature of the redemption of debentures, and payment of interest thereon, repayment of temporary loans, construction of permanent buildings or other works, purchases of real estate, and so forth. The expenditures of a municipal corporation for a given year, are the debts contracted by the corporation within the particular period, even though they may not have been satisfied by payment. It is safe to say that while in the average municipality, the revenues will be exhibited at their true value in the financial statement for the year, the expenditures will be found to be rarely so. The desire of the representatives of the ratepayers to show a surplus by omitting, often by deliberate design, to include in the expenditures debts contracted but unpaid, is the rule and not the exception. If a true and faithful statement is to be presented, all the accounts for debts contracted within the period should be passed by the council, and, if immediate payment is not possible, carried by the treasurer to the credit of the individuals, the debits being made to the proper accounts of expenditure. These debts will then be recorded as ledger liabilities, and will appear in the balance sheet as such, and the expenditures of the year will present a true statement of the condition of affairs.

CHAPTER II.

The Cash Book.

The book of prime importance in all municipal accounting is the cash book. Other books of account are necessary and requisite, but the cash book is the central figure of the group—the final results culminating in the ledger entries. In many rural municipalities the cash book is practically the only one kept by the Treasurer, and the periodical analysis of the accounts falls generally to the auditors. As is well known, these officials have even a less intimate knowledge of the affairs of the corporation, than the treasurer, the result being that "confusion worse confounded" is the order of the day. In the province of Ontario considerable progress has been made along the line of an improvment in this dirction, by the introduction of a uniform system of cash account, the use of which has been compulsory. In the system adopted by the Legislature—and designed for use in rural municipalities, villages, towns, and cities having less than 15,000 population—the main considerations sought have been simplicity and correctness—with a minimum of labor, the completed result being an abstract statement of receipts and expenditures fairly well analyzed.

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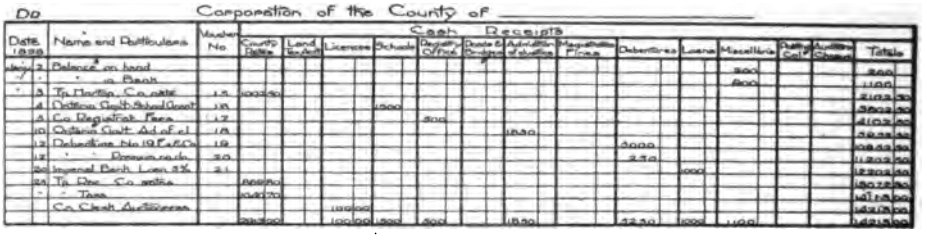
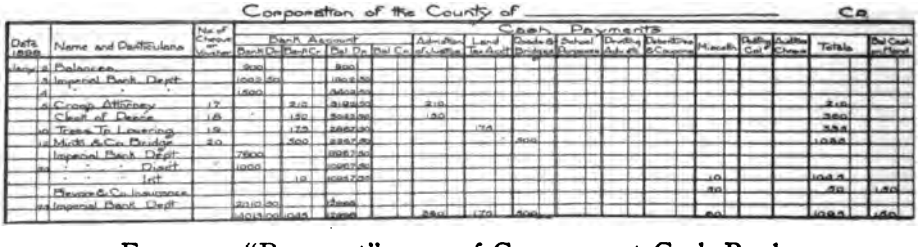
In the illustration given herewith, is found the form for counties, the ruling being practically the same for city, town, village and township accounts, changes in the headings being made to suit the different requirements. The opening entries in the illustration give the balance on hand and in the bank, these being carried to the total column. The various receipts have their various columns, and the additions to the total column exhibit with each entry the whole amount of income from all sources, while the additions of the individual columns gives the exact receipts in each department of the accounts. The balance in the bank account is also carried continuously. Distribution of the payments is made as the charges are entered, the gross payments being carried in the total column. The correct-



Form 2—"Receipt" page of Government Cash Book.

ness of the clerical work is proved by the addition of the balance of cash in hand, balance in bank and total payments, and these should agree with the gross receipts as recorded in the total column. The principles of the provincial cash book are well exhibited in the illustration given, the limits of the page being too circumscribed to permit of a full page illustration.



Form 3.—"Payment" page of Government Cash Book.

The headings showing the divisions of account as they appear in the various books are as follows:

TOWNSHIPS.

Receipts: (1) Resident Taxes, (2) Non-Rersident Taxes, (3) Arrears of Taxes, (4) Dog Tax, (5) Fines, (6) School Purposes, (7) Licenses, (8) Debentures, (9- Bills Payable, (10) Loans, (11) Miscellaneous, (12) to (17). In blank for such other accounts as it is found necessary or desirable to exhibit individually.

Payments: (1) Salaries and Allowances, (2) Stationery and Printing, (3) Law costs, (4) Roads and Bridges, (5) Charity, (6) County Rates, (7) School Purposes, (8) Interest, (9) Board of Health, (10) Debentures, (11) Coupons, (12) Loans and Notes paid, (13) Deposits in Sinking Fund Ac-

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count, (14) Drainage, (15) Miscellaneous, (16 to 20) in blank for such other accounts as it is found necessary or desirable to exhibit individually.

VILLAGES.

Receipts: (1) Bills Payable, (2) Resident Taxes, (3) Non-Resident Taxes, (4) Dog Tax, (5) School Purposes, (6) Licenses, (7) Fines, (8) Rents, (9) Debentures, (10) Loans, (11- Miscellaneous, (12 to 15) in blank.

Payments: (1) Bills Payable, (2) Salaries, Allowances, etc., (3) Printing, Postage, Advertising, (4) Interest, (5) Law Costs, (6) Roads and Bridges, (7) Charity, (8) School Purposes, (9) Debentures, (10) Coupons, (11) Fire Protection, (12) County Rates, (13) Loans Current, (14) Street Lighting, (15) Town Hall, (16) Deposited in Sinking Fund Account, (17) Miscellaneous, (18 to 20) in blank.

TOWNS.

Receipts: (1) Resident Taxes, (2) Non-Resident Taxes, (3) Arrears of Taxes (4) Dog Tax, (5) Water Rates, (6) Rents, (7) Licenses, (8) School grants, (9) Debentures, (10) Loans, (11) Fines, (12) Market, (13) Miscellaneous, (14 to 17) in blank.

Payments: (1) Salaries and Allowances, (2) Printing, Advertising and Stationery, (3) Insurance, (4) Fire, Water and Gas, (6) Law Costs, (7) Roads and Bridges, (8) Charity, (9) Debentures, (10) Coupons, (11) Bills Payable, (12) Interest, (13) Waterworks Capital account, (14) Waterworks Maintenance, (15) County Rates, (16) School Account, (17) Market, (18) Board of Health, (19) Sinking Fund, (20) Miscellaneous, (21 and 22) in blank.

CITIES.

Receipts: (1) Bills Payable, (2) Debentures, (3) Resident Taxes, (4) Non-resident Taxes, (5) Arrears of Taxes, (6) Interest, (7) Water Rates, (8) Market Fees, (9) Market Rates, (10) Police Fines, (11) Licenses, (12) Free Library, (13) Public Schools, (14) Miscellaneous, (15, 16 and 17) in blank.

Payments: (1) Bills Payable, (2) Interest, (3) Board of Works, (4) Free Library, (5) Public Schools, (6) High Schools, (7) Printing, Advertising and Stationery, (8) Fire, Water and Gas, (9) Police Commission, (10) Parks and Trees, (11) Market House, (12) Salaries, (13) Debentures, (14) Coupons, (15) Board of Health, (16) Charity, (17) Water Works Maintenance, (18) Sewer Maintenance, (19) Deposited in Sinking Fund, (20) Miscellaneous, (21 and 22) in blank.

COUNTIES.

Receipts: (1) County Rates, (2) Land Tax Account, (3) Licenses, (4) Schools, (5) Registry Office, (6) Roads and Bridges, (7) Administration of Justice, (8) Magistrate's Fines, (9) Debentures, (10) Loans, (11) Redemption of Lands, (12) Division Court Fund, (13) Miscellaneous, (14, 15 and 16) in blank.

Payments: (1) Administration of Justice, (2) Land Tax Account, (3) Roads and Bridges, (4) Miscellaneous Grants, (5) Municipal Government, (6) School Purposes, (7) Registry Office, (8) Gaol, (9) Printing, Advertising and Postage, (10) Redemption of Lands, (11) Law Costs, (12) Debentures and Coupons, (13) Loans Current, (14) Interest, (15) Deposits in Sinking Fund, (16) County Property, (17) Insurance, Heat, Light, etc., (18) Division Court Fund, (19) Miscellaneous, (20, 21) in blank.

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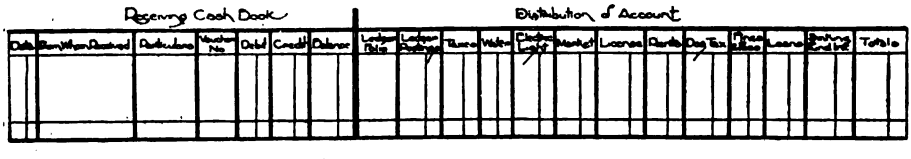
Objection is sometimes made to the labor involved in the carrying of the continuous balances. There might be force in this objection if the official were to follow slavishly the bringing down of the balances with every entry. While such a proceeding was necessary in the pro-forma sheet which is embodied in each cash book, it is not really expected or required in actual practice. The sum of all checks entered at one time, or of all deposits, may be readily deducted from or added to the balances, at single operations. So long as the totals and balances are recorded at the conclusion of each day's business, the modus operandi whereby this is effected is of small moment.

THE TWO VOLUME CASH BOOK.

In the larger municipalities where the accounts are kept in greater detail, another form of Cash Account is recommended. In this the principles embodied in the cash books already described, are followed, with the columnar analysis reduced in some degree, in view of the fact that the ledger will be utilized to a much greater extent than is usual in most of the municipalities where the cash books previously described are used.

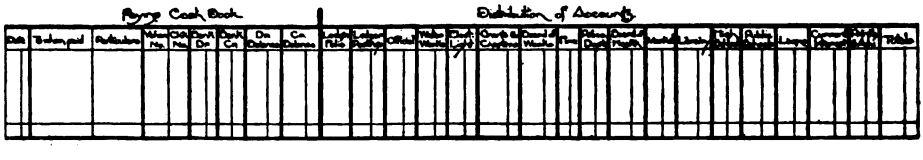
It is preferable that the general cash book should be in two volumes, the receiving cash book to contain all revenues, with analyzing columns for the representative sources of income. The form (4) fully exemplifies the idea.



Form 4—Showing Page of Receiving Cash Book.

As deposits are made in bank, credit is taken in the proper column, and the remainder in the balance column, exhibits the cash in hands of the treasurer.

The paying cash book contains the bank account in ordinary bank deposit ledger style, with the distribution of accounts following. Form (5) makes further explanation unnecessary.



Form 5—Showing Page of Paying Cash Book.

Where the volume of business requires a division of labor, the two-volume cash book becomes a necessity.

ABSTRACT REPORTS.

The prime advantage of the Columnar Cash Book is that the official is enabled to prepare with a minimum of labor, a daily, weekly or monthly

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abstract of receipts and disbursements for transmission to the council or auditors.

Corporation of the County of _____

Statement of Receipts and Disbursements

_____ 189__ to _____ 189__

Receipts	As at Last Report	As since Last Report	Total	Disbursements	As at Last Report	As since Last Report	Total
Balance on hand				Administration of Justice			
" in Bank				Land Tax Account			
County rates				Roads and Bridges			
Land Tax Account				Municipal Grants			
Licences				School Purposes			
Schools				Registry Office			
Registry Office				Gaol			
Roads and Bridges				Printing, Stationery, etc.			
Administration of Justice				Redemption of Lands			
Magistrates Fines				Law Costs			
Debentures				Debentures & Coupons			
Loans				Loans Current			
Interest				Interest			
Redemption of Lands				Sinking Fund			
Division Court Fund				County Property			
Miscellaneous				Insurance Heat Light etc			
				Division Court Fund			
				Miscellaneous			
				Balance due from Bank			
				Balance on hand			

Certified Correct

Co. Treasurer

Form 6—Abstract Statement of Receipts and Disbursements, as Applicable to Counties.

The form above is fairly full and comprehensive, being to some extent comparative, when taken in conjunction with the previous report.

CHAPTER III.

The Journal.

The aim of many book-keepers of the present day is to do away altogether with the journal, and, to accomplish this, matter entirely foreign to the cash account, is often introduced therein. While it is desirable to use the journal to the least possible extent, yet it cannot be altogether dispensed with, it is necessary that the introduction of rates and revenues should be recorded in the journal, the transfer of entries, the correction of errors, which may occur, the collating of the municipal "profit and loss" account, and the closing entries of each fiscal period.

CHAPTER IV.

The Ledger.

The ledger does not differ from the form in use for commercial purposes, nor do the principles involved in the keeping thereof differ in any material point. The material for a perfect balance sheet should be contained between the covers of a properly kept ledger, and such a balance sheet will show in concise form the exact financial position of the municipality. In

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the allocation of the various accounts in the ledger, regard should be had to the position which they occupy in the balance sheet and revenue account. Much time will be saved, both to the officials and the auditors, if the details of all transactions be fully set out in the ledger. If, as properly should be, the treasurer were compelled by the auditors to prepare the annual statements and submit the same to them for inspection, the advantage of giving the particulars of each entry in the ledger would be much more deeply impressed upon that official.

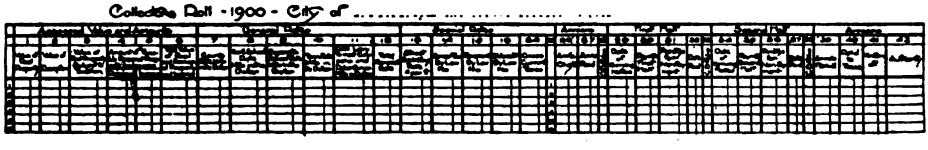
CHAPTER V.

Subsidiary Books.

It is of great importance that the utmost facilities should be provided for internal checking, in the preparation of the various subsidiary books, as the water rates, electric light, and collector's tax rolls. In the case of the collector's roll, a form largely statutory must be used. In the other departments mentioned, such records may be kept as are prescribed by the council or adopted by the officials, and these are perfect or imperfect, according to the ability of the designer.

THE COLLECTOR'S ROLL.

As stated above, the form for this is largely statutory, and one is bound to admit, speaking from the accountant's standpoint, there is much room for improvement. I have prepared a sketch which I am inclined to say would much better fill the requirements of the municipality, and satisfy the accountant, than the stock form ordinarily in use. Provision is made for a complete internal check. As many columns would be required for special rates as there are local improvements.



Form 7—Showing Improved Collector's Roll.

COLLECTOR'S CASH BOOK.

The collector's cash book should be ruled so as to show in its various columns the moneys collected for arrears of taxes, for percentages, and the current taxes should be analyzed in accordance with the divisions which have been made in the posting of the several items to the ledger, with a column for credits, as payments are made to the treasurer, also for date of payment, and signature of treasurer.

THE ASSESSOR'S ROLL.

Being statutory in form, and covering pretty accurately the necessary data required for the preparation of the collector's roll, no changes are suggested in the ordinary form.

WATER WORKS ACCOUNTS.

The forms presented herewith cover the principal books of accounting in a waterworks department, and are more especially designed for use

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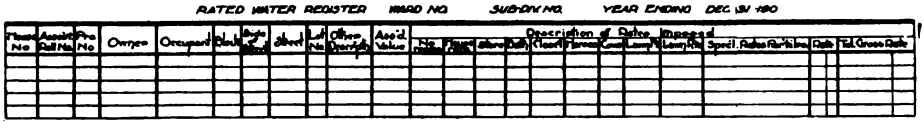
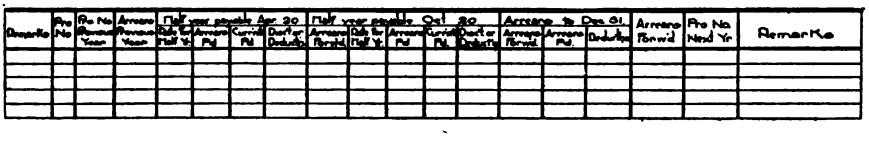
where the waterworks, though under corporate ownership, are controlled by a commission. With slight changes they may be utilized and made to form a part of the system if under the control of the treasurer, the principles involved in both cases being the same.

The water rate register contains on one page the house number, assessment roll number, office progressive number, name of occupant, owner, street, ward, etc., in detail; then comes the assessed value, upon which is based the property charge, and the special rates for which charges are levied. These, of course, vary with the different methods of imposing rates. The various rates are totalled in the column for that purpose. The right hand page is of the most importance to the accountant. The progressive office numbers are repeated for ready reference purposes. Next comes the "arrears from previous year," with the "pro-number" for that year, and next is the "rate for half year,"which is just one-half the rate in the total column on the page opposite. It may be said that the writing in of this column each term is unnecessary work, but the internal check cannot well be provided in any other way; and for the further reason that rates may vary term by term. The headings of the columns which follow are self-explanatory. In the cash columns will be entered in the upper left hand corner the cash book folio. In the deduction column will be entered all abatements or allowances made on account of "no horse," "no cow," no "double tenancy," etc., the receipt of which abatements must in all cases be acknowledged by the signature of the recipient to a "deduction slip." The percentage column is called into use immediately upon the expiration of the date set for payment of rates without the imposition of the penalty, when each delinquent's account is charged with the additional rate. While the percentages are being added, the closing up of the individual accounts is being proceeded with, by the carrying forward of all unpaid amounts to the "arrears forward" column. This accomplished, the various columns are footed and checked, when the sum of the debit columns must equal the sum of the credit columns.


RATED WATER REGISTER WARD NO. SUB-DIV NO. YEAR ENDING DEC. 31 190

Form 8—Left-hand page of Water Rates Register.


RATED WATER REGISTER WARD NO. SUB-DIV NO. YEAR ENDING DEC. 31 · 190

Form 9—Right-hand page of Water Rates Register.

Form 10 illustrates the "receiving cash book," and requires no explanation from me. In the case of a Commission the "credits" column records the bank deposits, and if the payments are handled through the treasurer's office, the amount transferred to the general cash book.

The gross rates levied are charged to water rates account half-yearly, the contra entry being to revenue account. At the close of each term, the deductions, discounts, etc., are credits to water rates account, and a corresponding debit is made to water rate discounts, which ultimately finds its

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way to the debit of revenue account. Percentage is a debit to water rates account and a credit to revenue.

WINDSOR WATER COMMISSION
CASH RECEIVED

Date	Particulars Fo No	Special Register	Metered Water	Arrs Paid Water 190	Arrs Curnt Paid Water	Current Paid Water	Credits	Balance	Discounts & Deductions

Form 10—Water Rates Receiving Cash Book.

A separate register is maintained for use in the recording of metered water, an excellent form for which is given herewith.

Where the waterworks are handled by commissioners, who disburse their own funds, a combination cash book and voucher register is used, as per Form 12. The principles applied here are the same as those employed in the provincial cash book, and require no further elucidation. The distribution of accounts is divided into five general headings, "office," "pumping station," "distributing system," "meters" and "general," and these are again subdivided to the regular accounts to be found under each.

WINDSOR WATER COMMISSION
VOUCHER CASH

Date	Particulars		Voucher No	Debit	Credit	Dr Balance	Cr Balance

WINDSOR WATER COMMISSION
DISTRIBUTION OF ACCOUNTS

Office				Pumping Station					Distributing System				Meters			General				
Salaries	Supplies	Rent & Ins		Salaries	Fuel	Supplies	Repairs	Condemn	Wages	Supplies	Repairs	Condemn	Repairs	Supplies	Condemn	Drives & Int	Legal	Appliances	Misc	Totals

Form 12.—Voucher Cash Book and Register.

TAX RECORDS.

In the matter of keeping records of the arrears of taxes there is great diversity of method. The larger corporations are usually more careful in the keeping of these accounts, but there is yet a lamentable lack of an efficient means of "ready reference." An index prepared in three parts, each of which relates to the other, while some trouble to prepare will be found to prove of great value as a time saver. Part one is an alphabetical index of the streets, referring to part 3, as seen in the illustration.

Part 2 is a list of the different plans, commencing with the Crown or Government survey, and also referring to Part 3.

Part 3 is the index proper. Each lot is given a line to itself, and every parcel of property in the corporation is gathered into the index under its proper street and plan.

When the uncollected taxes have been returned to the treasurer, an account is opened in the lot ledger (if one be not already opened) for each

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Windsor Water Commission
Metered Water Register

Name | Street / Meter owned by / Annual Meter Rent # | Make / Size / No. | Date set / Date removed / Rec'd from Mf'r.

Date of Reading	Readings	Feet	Gallons	Rate Gross	Rate of Disct.	Gross Amount	Meter Rent	Total	Arrears to Pay	Disct. or Red'n.	Rec'd. Water Rates	Rec'd Meter Rent	C.B. Folio	Arrears Carried Down	Remarks

Form 11.—Metered Water Register.

WINDSOR WATER COMMISSION
SPECIAL REGISTER

Date	Name	Particulars	Vouch'r No		Con-struction	Misc'l-laneo's	Certificts.	Spec'l. Water	Permits	Total Chg:	Additns.	Deductns.	Am't Rec'd	C.B. Folio

Form 11a.—Special Register.

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property against which there is arrears, and the ledger folio entered opposite the lot in Part 3 of the index. As the arrears are paid the ledger folio is marked off. When a search is required, reference is made to the index.

STREET INDEX

Name of Street	Index Folios								
Adelaide	15	17	22	23	24	29	65	67	
Aurelia	85	86	87	88					
Arnold	93	95	98						
Baldwin	32	33	34	35	36				
Baxter	89	90							
Carleton	91	92							

Form 13.—Street Index (Part. 1).

If there are no folios against the lots, or if crossed off, there are no arrears, and the search is completed; always presuming, of course, that the work is

PLANS

No	For whom Surveyed	By whom Surveyed	Index Folios						
1	Old Survey	Crown	15	to	27				
2	Thos. Beattie	A. P. Salter	27	28	29				
3	R. S. Wood	R. Parr	31	to	38				
37	G. Thomas	do	39	to	43				
46	Read & Pegley	Salter & Jones	43	to	49				
40	Jno. Northwood	W. G. Mc. Genze	104	105					

Form 14.—Index of Plans.

faithfully done, upon which foundation the value of any system must depend. When posting from the collector's roll to the lot ledger, the posting folio should be entered in each book for ready reference.

OLD SURVEY

No. of Block	No. of Lot	Fronting on Street		Ledger Folios						
	1	N. Water								
	2	S. Stanley		60						
	3	S. Stanley	E. Ninth							
	4	N. Water	E. Ninth							
	5	N. Water	W. Ninth	59						
	6	S. Stanley	W. Ninth							
	7	S. Stanley		20						
	8	N. Water								
	9	N. Water								
	10	S. Stanley		10						

Form 15.—Index to Lots.

In a paper read before the Institute of Chartered Accountants some years since, by the late Mr. Powis, is was suggested that in case of minor

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municipalities, arrears of taxes should not be reported to the county treasurer "unless and until the arrears have reached that point when the land is liable to be sold for taxes." In this suggestion I most heartily concur. This phase of municipal government as it stands at the present time is most prolific in loss, trouble and annoyance.

My sentiments also are practically voiced in his remarks as to the proper method of procedure prior to sale. "After the time has passed during which taxes ought to be paid in each year, a return should be made by the minor municipality to the county, showing what properties are then liable to be sold for taxes. Only between such date and the day of sale, and only concerning such properties as are liable to be sold, should it be necessary to apply to the county officer at all. A sale should be held by the county officer only once in each year, when there is any property liable to be sold. Such sale should be held before the time for striking the rate by the municipality. Immediately after the sale the county officer should make a return to the minor municipality, showing the result of each sale, and remitting the money collected, after deducting his charges. The transactions of each year should thus be closed and balanced. The only record necessary then on the part of the county officer is a full account of the circumstances connected with each sale and the result. And it is not necessary that the county officer should keep any further account concerning arrears of taxes. This system and process should go on from year to year, the county officer acting each time solely on the new report handed him from the minor municipality." There would then be no mixing up of the township and county business. Full remittance would be made to the minor municipality for the proceeds of the tax sale, and the local municipality should then remit in full to the county treasurer for the county rate. In cases of redemption the county officer's receipt would be a sufficient voucher for the township treasurer, upon which to return the purchase price to the vendee at the tax sale.

Till such time as our legislators may be brought to see the necessity for simplification of the methods as at present prescribed by the statutes, these methods must be followed. In the majority of rural municipalities, great carelessness exists in keeping the records pertaining to these arrears. In most townships absolutely no account is taken of the arrears, once they have been sent to the county treasurer, and no check is had thereafter upon either official. County auditors in a number of instances have declined to go into the county treasurer's accounts relative to these arrears, on the ground that such was outside the scope of the audit, and that the county treasurer in keeping these accounts was the agent of the rural municipalities and not of the county.

If a systematic record upon the following lines be kept, no difficulty will be experienced in maintaining a perfect and accurate account of tax arrears.

The clerk of the minor municipality to prepare the non-resident roll in duplicate, sending one copy to the county treasurer and the other to the treasurer of his own municipality, who will, upon receipt thereof, enter in a properly ruled lot book or ledger, the charges against each property affected. Upon receiving the return of "uncollected taxes" from the collector the treasurer should, in like manner, and in the same book, enter all properties returned, with the amounts against each. Upon May 1st in each year, (the date set for the statutory addition of 10 per cent.) the county treasurer should prepare a statement in detail of the percentages added by

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S.E. ¼ LOT 73 CON 2 (NON-RESIDENT)

May	1 95	N.R. Taxes 1894	14	50	14	50						
"	1 96	10%	1	45	15	95						
"	1 97	10%	1	59	17	54	Nov	1 97	Co Treas	17	54	17 54

Form 16.—Ledger Specifications for "Non-Resident" Lands in Arrears for Taxes.

him to the various arrears, transmitting the same to the several treasurers of the minor municipalities, who in turn will enter the amounts so reported against the respective lots in the lot ledger. As payments are made to the county treasurer, he is required by the law as it now stands to prepare receipts in triplicate—one of which goes to the payor, the second to the

N ½ LOT 7 CON 10 (JOHN SMITH)

Date	Particulars	Charges		Total		Date		Particulars	Amnt.		Total	
May 1 95	Taxes 1894	61	00	61	00							
" 1 96	10%	6	10	67	10							
" 1 97	10%	6	71	73	81							
" 1 98	10%	7	38	81	19	May	30 98	Co Treas.	81	19	81	19

Form 17.—Specification for Resident Arrears Ledger.

county clerk, and the third he retains. What good purpose the sending of the receipt to the county clerk is intended to serve, I have never been able to discover. He files it away and that is the end of it. If, instead, the second receipt were sent to the clerk of the municipality interested, by that official to be carefully filed for the future use of the auditors, a better purpose would be served. Then, quarterly, the county treasurer should remit to the local treasurer, by check, the full amount of taxes collected during the preceding three months, together with a statement showing the dates of payment, and the amounts of several collections, when the necessary entries should be made in the cash account and lot ledger of the minor municipality. The accounts of the local treasurer would then at all times show the exact standing of the municipality as regards arrears of taxes.

The triplicate receipt is now not necessary—a duplicate receipt being sufficient—one copy going to the person paying the taxes; the other being retained in the treasurer's office.

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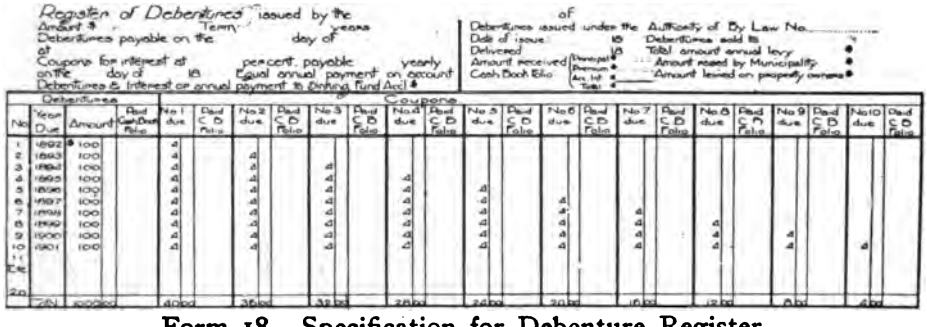
DEBENTURE REGISTER.

A complete record of the debenture indebtedness of every municipality is of absolute importance. Before the debentures leave the hands of the treasurer all particulars relating thereto should be entered in a debenture register, a very comprehensive form for which is herewith submitted. It will be observed that the fullest information is required to be entered as to the amount, years to run, dates payable, place of payment, annual payment of principal and annual payment of interest as represented by the coupons, dates due, and payments to the sinking fund, when the debentures are issued upon that plan. Other particulars, as to the number of by-law authorizing the issue, date of sale, persons to whom sold, date of delivery, amount received, divided as to principal, premium and accrued interest. Then the total amount to be raised annually by assessment, with particulars as to how much is from the individual property owners, in case the work on account of which the debentures are issued, is in the nature of a local improvement. The specification given illustrates the idea for a ten-year debenture. The register should be ruled so as to cover twenty-year issues.

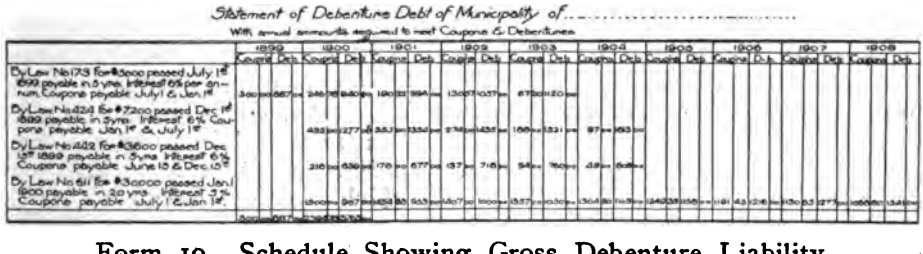

Register of Debentures issued by the ... of ...
Amount $ ... Term ... years
Debentures payable on the ... day of ...
at ...
Coupons for interest at ... per cent. payable ... yearly
on the ... day of ... 18 ... Equal annual payment on account
Debentures & Interest or annual payment to Sinking Fund Acct $
Debentures issued under the Authority of By Law No. ...
Date of issue: ... 19 ... Debentures sold to ...
Delivered ... 19 ... Total amount annual levy $
Amount received Principal $ ... Amount raised by Municipality $
Premium $ ... Amount levied on property owners $
Cash Book Folio Acc. Int $ ...
Total $ ...

No.	Debentures: Year Due	Amount	Paid Cash Book Folio	Coupons: No 1 due	Paid C D Folio	No 2 due	Paid C D Folio	No 3 due	Paid C D Folio	No 4 due	Paid C D Folio	No 5 due	Paid C D Folio	No 6 due	Paid C D Folio	No 7 due	Paid C D Folio	No 8 due	Paid C D Folio	No 9 due	Paid C D Folio	No 10 due	Paid C D Folio
1	1892	$ 100		$																			
2	1893	100		$		$																	
3	1894	100		$		$		$															
4	1895	100		$		$		$		$													
5	1896	100		$		$		$		$		$											
6	1897	100		$		$		$		$		$		$									
7	1898	100		$		$		$		$		$		$		$							
8	1899	100		$		$		$		$		$		$		$		$					
9	1900	100		$		$		$		$		$		$		$		$		$			
10	1901	100		$		$		$		$		$		$		$		$		$		$	
11																							
Etc																							
20																							
	Total	$ 2000		$ 1900		$ 1800		$ 1700		$ 1600		$ 1500		$ 1400		$ 1300		$ 1200		$ 1100		$ 1000	

Form 18.—Specification for Debenture Register.

GROSS DEBENTURE LIABILITY SCHEDULE.

To enable the treasurer to readily ascertain the total debenture indebtedness of the municipality at a glance, as it matures year by year, a schedule prepared after the specification exemplified in Form 19 will be found to be of inestimable convenience. The footings are carried in pencil, until the


Statement of Debenture Debt of Municipality of ...
With annual amounts required to meet Coupons & Debentures

	1899 Coupons	1899 Deb.	1900 Coupons	1900 Deb.	1901 Coupons	1901 Deb.	1902 Coupons	1902 Deb.	1903 Coupons	1903 Deb.	1904 Coupons	1904 Deb.	1905 Coupons	1905 Deb.	1906 Coupons	1906 Deb.	1907 Coupons	1907 Deb.	1908 Coupons	1908 Deb.
By Law No 173 for $3000 passed July 1st 1892 payable in 5 yrs. Interest 6% per annum. Coupons payable July 1 & Jan 1st																				
By Law No 424 for $7200 passed Dec 1st 1892 payable in 3 yrs. Interest 6% Coupons payable Jan 1st & July 1st																				
By Law No 482 for $3600 passed Dec 1st 1893 payable in 5 yrs. Interest 6% Coupons payable June 15 & Dec 15th																				
By Law No 611 for $3000 passed Jan 1 1900 payable in 20 yrs. Interest 3% Coupons payable July 1 & Jan 1st																				

Form 19.—Schedule Showing Gross Debenture Liability.

amounts have been raised and the debentures retired. As new issues occur the particulars are entered from time to time and the pencil footings are corrected.

The careful keeping of matured debentures is a matter of some importance, and one much neglected. A large book, similar to the ordinary

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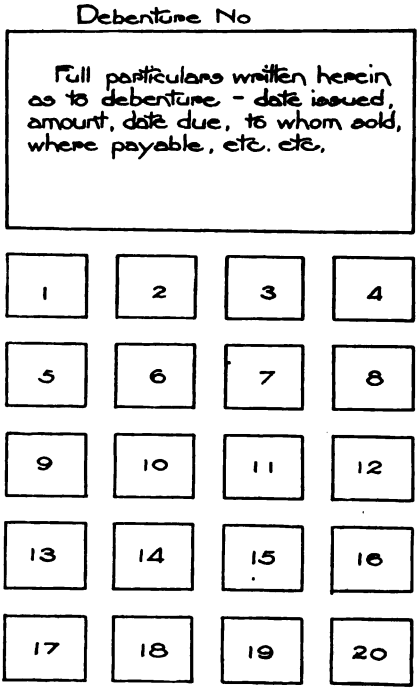
invoice book used in the commercial world, and ruled after the manner of Form 20, arranged to accommodate twenty coupons, is about as convenient a method of keeping these as I have seen. As the coupons mature, and



Form 20.—Filing Book for Cancelled Debentures and Ciupons.

are paid and cancelled, they are pasted in the book upon the block corresponding to the number (the highest number maturing first). At maturity the page contains the coupons and the original debenture, all in order.

CHAPTER VI.

Passing Accounts.

With the exception of those payments which are authorized by by-law or by statutory enactment, all others should be passed upon and authorized by the council previous to payment. In cities and towns it is usual to pass the accounts first through the several committees having to do with the expenditure, being finally checked by the Finance Committee, and presented in their report to the full council, which sanctions payment.

Another method is to have all accounts first come before the council, where they are read in detail and referred by that body to the proper committee. This plan necessitates a longer wait before payment of the account can be had, but has the advantage of a publicity which is often wholesome.

In the case of minor corporations and township councils, where the meetings are held less frequently, accounts are usually received and disposed of at the same session.

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All accounts should be certified to by an official of the corporation, the chairman of committee, or a member of the council, previous to presentation.

Accounts having been acted upon and payment authorized by the council, a warrant or order upon the treasurer is drawn and signed by the mayor, reeve, or clerk.

The usual form of warrant runs as follows:

No. .....

Sandwich, ...189

The Treasurer of the Municipal Corporation of Sandwich,

Please pay to.....or order,

the sum of.....dollars,

charging to .....Account

.....Mayor

Form 21.—Ordinary Warrant Form.

This warrant is handed to the person in whose favor it is made, and he presents it to the treasurer. That official generally takes up the warrant and cancels it, after issuing his check for the same amount and to the same order. This operation necessitates a duplication of work by the clerk and treasurer, and a multiplication of vouchers altogether unnecessary. The substitution of a form of warrant which also operates as a bank check

The Merchant's Bank will please pay and charge to Current Expenditure a/c .....Treasurer

No.....

Sandwich 189

The Treasurer of the Municipal Corporation of Sandwich

Please pay to .....or order

the sum of.....Dollars

charging to.....Account

.....Mayor

Form 22.—Combination Warrant and Check.

when countersigned by the treasurer does away with the double labor and provides a single but comprehensive voucher.

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With this warrant in his hand the payee applies to the treasurer. The treasurer takes the warrant, enters it in his cash book, and, signing it in the place designated in the illustration, returns it to the person to whom payable and he proceeds to use the same as an ordinary check. If, by inadvertence, the treasurer omits to enter the amount and particulars of the warrant in his books, he is bound to discover the error and rectify it at the end of the month, when he proceeds to verify his cash and bank accounts.

SHEET SYSTEM OF VOUCHER.

An excellent system and one which will prove labor-saving, as well as providing a means for the further multiplication of vouchers is the following, which may readily be adapted to the requirements of township and village corporations.

Upon a form as shown in 23, a list of all accounts passed should be entered, the accounts briefly numbered consecutively, the bill itself being given the same number. When the other business of the session has been completed, this list of accounts should be formally acted upon, by the passing of a resolution "that accounts numebred 30 to 37 be passed and that the reeve issue his order to the treasurer for payment of the same."

At the foot of the form, as will be seen, is an instruction to the treasurer to pay, which is made operative by the signatures of the reeve and clerk.

In writing up the minutes the clerk copies, in detail, the list of accounts, with their respective numbers, and he carefully files the original bills, which have all been properly endorsed with a number corresponding to that opposite the account in the list.

The original list is then transmitted to the treasurer, and he proceeds to pay.

Statement of Accounts passed by the Council of the Town of on. 190

No	Name	For What	Acct Chgd.	Amount	Signature of Recipient	C. B. Folio	Date of Payment	No. of Cheque

The Treasurer will please pay the above accounts numbered to inclusive

Reeve
Clerk

Form 23.—Sheet System of Voucher.

CHAPTER VII.

Municipal Banking.

Every dollar which goes through the hands of the treasurer should pass through the bank account. All moneys should be paid only by bank check, and councils should make this compulsory. It is advisable to have two bank accounts, the principal one of which should be in a chartered bank. This should be in the name of the corporation or municipality, and checks thereon to be signed by the head of the council and the treasurer. Into this account the tax collector should be required to pay all taxes.

The second account should be in the name of the treasurer of the municipality, as such, and all funds of the corporation would require to pass

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through this account, but not more than a stated amount should be allowed in the treasurer's account at one time. As the treasurer's account becomes depleted of funds, fresh amounts are tranferred thereto from the account standing in the name of the municipality. The reeve or mayor of the council is thus enabled to keep close tab on the affairs of the municipality; and the security to be given by the treasurer need not be as large.

It will often be found convenient that the treasurer's account shall be kept in a centrally located private bank; and this is permissable with the consent of the council.

There is no objection to the treasurer's cashing his own checks, to oblige a ratepayer, but the checks so paid must be held as cash, and be deposited to the credit of his account at the first opportunity.

RECONCILIATION STATEMENT.

At the end of each month the treasurer should check his cash and bank accounts, and prepare a reconciliation statement.

A special book, ruled to three columns, should be kept for this purpose.

To illustrate the idea, examples are submitted.

At the end of January, when the treasurer receives his bank pass book, he finds that the bank reports more cash on hand than his own cash book shows. The official at once checks the accounts and finds that a number of checks issued and charged by him have not been presented for payment previous to the close of the month. He then proceeds to reconcile the accounts as exhibited in Form 24.

1899				
Jan. 31.	Bank balance per Cash Book			$370 50
"	" " " Pass "		$573 33	
	Less O-S Cheques:			
	No. 280—Jones	$42 00		
	" 332—Smith	37 50		
	" 333—Thomson	70 00		
	" 375—Harum & Co	20 00		
	" 380—Fulton	33 33	202 83	370 50

Form 24.—Reconciliation Statement.

Upon receipt of the February account with checks, the treasurer again checks up, and after clearing off the business of the month just closed, he finds that the bank has charged two or three items not in the current month's business. Without searching back through hundreds of stubs to ascertain what these items represent, he at once turns to his reconciliation account for the preceding month, and finds that of the outstanding checks at the close of the month Nos. 330, 375 and 380 have peen paid. Of the old checks, Nos. 332 and 333 are still outstanding, and these are brought down to the next account, which will look as below:

The outstanding checks of the longest duration also come first on the list, and thus a quick reference tab is kept upon them, and after a sufficient length of time has elapsed, duplicates may be issued, or steps taken to cancel the payment of the outstandings, as the circumstances may require.

1899				
Feb. 28	Bank balances per Cash Book			$783 75
"	" " " Pass "		$992 37	
	Less O-S Cheques:			
	No. 332—Smith	$37 50		
	" 333—Thomson	70 00		
	" 396—Meeking	14 28		
	" 402—Somers	50 00		
	" 417—Mitchell	36 84	208 62	783 75

Form 25.—Reconciliation Statement No. 2.

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The account may be kept in another way, by taking totals instead of balances, as the following formula shows. The result will be the same by either method, the first method being, to my mind, much the more practical.

1899				
Jan. 1	Bank balance per Cash Book	$137 50		
" 31	Deposits	1731 37	$1868 87	
" 31	Cheques, etc		1498 37	$370 50
" 31	Balance per Pass Book		$ 573 33	
	LESS O-S CHEQUES:			
	No. 330—Jones	$42 00		
	" 332—Smith	87 50		
	" 342—Thomson	70 00		
	" 375—Forbes	20 00		
	" 380—Fulton	33 33	202 83	370 50

Form 26.—Another Form of Reconciliation Statement.

CHAPTER VIII.

Vouchers.

It seems almost unnecessary to say that every payment must be substantiated by voucher, upon which should be endorsed the authority under which payment is made. It is be not convenient to utilize the check numbers, then all vouchers would best be numbered consecutively, and the numbers should find a place against each item, irrespective of the number of books through which it may pass. Reference thereto is thus much facilitated. Although but few treasurers so regard it, yet it is of equal importance that good and sufficient vouchers shall be preserved in the case of receipts as well as of disbursements. Just here I may interject that it is surprising to find how little attention is paid by the rural auditor, and in many instances by the auditor of urban accounts as well, to checking the receipts as against their various sources. It seems to be taken for granted that there can be nothing wrong with the receipt side of the cash book, but the greatest care must be taken to see that the treasurer, in making disbursements, has not tampered with the funds of the rate-payers. In cases of default, experience goes to prove that the trouble most often arises from failure to charge, rather than from manipulation of the funds once they have been entered in the books of account.

In every municipality there should be an official form of receipt, and these should be numbered consecutively. For every dollar received on civic account an official receipt should be issued.

Every receipt in the book should be accounted for. In case of an error being made and a receipt cancelled, the spoiled form should not be destroyed, but should be securely attached to the stub or counterfoil of the receipt book, for the benefit of the auditors. The same remarks apply to checks. Checks from the corporation book should never be taken for other purposes, and every form should be accounted for. Explanations to the auditors are thus rendered unnecessary. The records contain their own explanations.

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LIBRARY OF THE UNIVERSITY OF CALIFORNIA

CHAPTER IX.

Striking the Rate.

In many municipalities too little care is taken in the preparation of the estimates. It may be that although the whole requirements of the municipality are provided for, yet by looseness in the keeping of the records, the moneys levied are not applied as was originally intended and authorized. Greater expenditures are made in some directions than are provided for in the estimates, and to meet this contingency, some other fund is made to suffer. Usually the sinking fund, if there happens to be one, is made the scapegoat. I call to mind a recent audit where in twelve years, although the sinking fund levy was placed in the estimates and was raised each year, yet in only eight of the years was the sum deposited to the credit of the fund. When the original estimates were asked for they were not forthcoming; had not been preserved after the by-law striking the rate had been passed. An analysis of the entire tax levy was thus necessitated. Had the estimates been filed, and the amounts levied in the tax roll been carried to the proper accounts in the ledger, such a laches could not well have occurred. I recommend that the statement showing the estimates, upon which the by-law striking the rate is based should be incorporated in and made a part of such by-law, or, otherwise, that it should be copied in full in the minutes of the meeting of council at which passed.

The statement should show, first the sums required to meet the several fixed charges, or uncontrollable expenditures, and next the amounts which it has been estimated will be required for the carrying on of the municipal government. Against these should be placed first the anticipated revenue exclusive of the tax levy, and, second, the amount which must be raised by impost.

CHAPTER X.

Local Improvements.

When a public work has been decided upon, the necessary statutory preliminaries having been observed, there are two methods which may be followed to provide funds for the carrying on of the work, (1) by issuing debentures and disposing of the same in bulk at the outset of the undertaking, or by partial sales as the necessities of the work require; or (2) by effecting temporary loans as the work progresses, charging capital or construction account with the interest of these loans, to the offset later on by the interest which will have accrued upon the debentures, if they are dated concurrently with the initiation of the work. Very often it is impossible to tell at the outset the extent of the expenditures which may be requisite upon a contemplated work. The architect or engineer will furnish an estimate, generally an outside figure, and upon this is based the amount for which the debentures are issued. It may be that when tenders are called for, much less than the sum estimated will be needed, and if so then the full issue of debentures will not be necessary. The method of providing the requisite funds by temporary loan would seem to be preferable, if only for this reason; but where the work under construction is of the nature of a "local improvement" (part to be paid by the municipality and part by the owners of the properties to be benefited) there is an added reason for refraining from issuing the debentures till the completion of the work. In such case

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the construction of the improvement is in the nature of a partnership, and, properly, the greatest care should be taken to keep the transaction separate and free from other matters of a like nature, and from works in which only the corporation is interested. I use the word "properly" advisedly, for unfortunately the average municipal official is not careful in this regard and works are often undertaken and carried to completion, moneys advanced, and debentures sold without the slightest regard being had to the equities of the various interests concerned.

I have been unable to find any method of procedure in undertakings of this kind better than the one I shall shortly outline. It certainly has the advantage of simplicity. When the funds are required, arrangements are made for special advance from the bankers sufficient to meet the cost of the proposed undertaking, this advance to be carried in the way of an overdrawn account, guaranteed by a demand note, for the approximate requirement, if the bank rules require it. All checks and payments made on account of that particular work, are entered to a special account, and interest is periodically charged upon the advances. When the work has been completed, and the actual cost arrived at, the time for the disposal of the debentures will have come, and these will then be issued to an amount exactly sufficient to cover the cost of the work.

SPECIAL ASSESSMENT REGISTER.

The methods of keeping the records of these local improvement assessments are almost as varied as are the classes of work done under this system.

City of Windsor

Register of Special Rates levied under the authority of

Total cost of Improvement $ Annual Payment $

Street	Lot	Feet Frontage	Name	C B Folio	Total Assessm't		Total Commut'n		Years to Run	Annual Paym't	

City of Windsor

By-Law No. Passed 190

City's Proportion $

Rate payers " $ Debentures issued under By-Law Passed

Record of Commutation paid or Folio entered in Collectors Roll of each year																			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

Form 27.—Special Assessment Register.

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Where there are not more than a score of assessments which it is necessary to keep separate, an individual column for each work in the collector's roll is all that is necessary. Where the works exceed the number mentioned, then it becomes necessary to introduce a special assessment register. The form supplied here (27) is as complete and simple as any that can be devised. A page is given to each improvement; all the particulars as to the name of work, its nature, the total cost thereof, the number of levies, the years in which the collections are to be made, the number of the by-law under which constructed, the number of the consolidating by-law (if consolidated for the purpose of issuing debentures), the amount of premium received at sale of the bonds, the amount of each individual assessment; information as to commutations, all these are recorded in methodical fashion. A column is supplied for each individual year, and in this is entered opposite each name the pro-number, against which the amount has been placed in the general collector's roll. By a reference to the form given herewith it will be seen that a column has been provided for the principal items which enter into the local improvement system, as sewer tax, pavement tax, sidewalk tax, street sprinlking rate. In the upper left hand corner of the space for each entry in the collector's roll should be entered the folio of the special assessment register from which the charge has been taken.

CHAPTER XI.

Public Libraries.

The form of accounts best suited to the use of libraries is presented below. The system is simple, yet absolutely complete. Within the one book is combined the ordinary cash book, journal and ledger. The fullest information concerning the accounts is available at a moment's notice; an easy method of proving the correctness of the clerical work is provided, and the whole business of the institution appears on the page containing the final entry. But few instructions are required to enable the average person, even though not skilled in book-keeping, to keep the accounts by this method.

The accompanying illustration, written up and worked out to an abstract, shows the manner of keeping the accounts of a public library, and is prepared in accordance with the requirements for the returns which must annually be made to the Minister of Education.

ABSTRACT.

Jan.	1.	Balance from previous year	$ 33 00
		Members' fees	12 00
April	30.	Leg. and Mun. grants	330 00
		Evening classes	50 00
			$425 00

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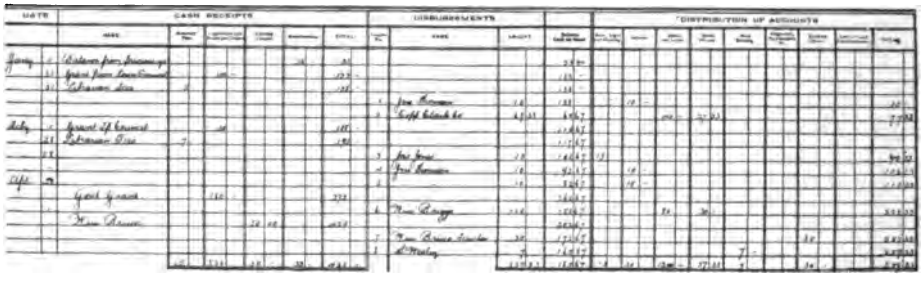
DISBURSEMENTS.

April 30.	Rent, light, etc.	$ 15 00
	Salaries	30 00
	Books (not fiction)	120 00
	Books (fiction)	57 03
	Binding	7 00
	Evening classes	30 00
		$259 33
	Balance on hand	165 67
		$425 00

All cash receipts are entered under their proper date and classification, and are carried to the "total" column and added in with each entry, so that the sum of the total column represents at all times the total amount of cash received. As these entries are made the amount in each case is added into the "balance cash on hand" column.

All disbursements are entered under proper date, and in the column headed "amount," after which the amount is deducted from the "balance cash on hand." The amount of the disbursement is then carried over to the "distribution of accounts," and is entered in the proper column or columns. This is, or these are, then carried to the "total" column, on the right hand side, and succeeding amounts are added in from time to time as the entries are made. The sum of these represents the total of the disbursements. To prove the correctness of the clerical work, add the "totals" of the distribution page to the "balance cash on hand," and the sum should (if no errors have been made) equal the total of the receipts.



Form 28.—Public Library Records.

In carrying over the accounts from page to page, the whole work must of necessity prove itself in a number of different ways. The sum of the footings of the receipts will equal the "total;" the sum of the footings of the "distribution" page will equal the "total." The sum of the "totals" and the "balance cash on hand" must equal the "total receipts." These and other proofs which may be applied make it next to impossible to make a mistake, unless wilfully, in transferring the accounts from one page to the next.

Where greater elaboration of detail is wished, the number of columns can be increased, and the book made of the necessary width to accommodate them.

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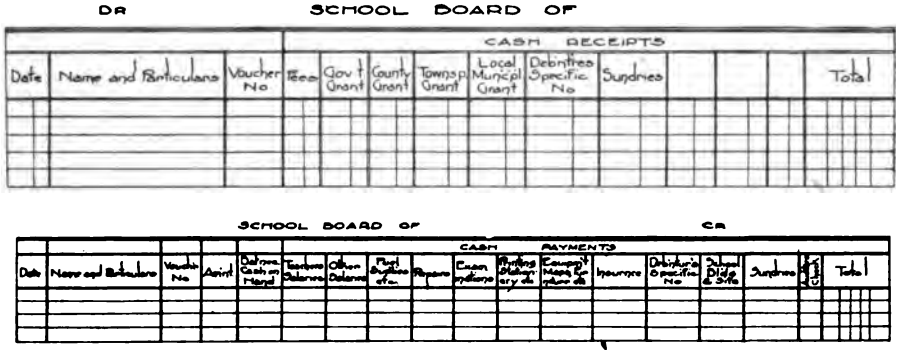
CHAPTER XII.

School Accounts.

It is as necessary that the accounts of the thousands of school sections throughout the land, should be properly and accurately kept, as with any other branch of public accounts. To this end what can be better than the adoption of a uniform system of accounts. In the form below will be found the principles of a simple, yet excellent system. It is along the same lines as the cash accounts for municipalities, and public libraries providing a positive and certain internal check. For details as to the keeping of this book, see chapter upon "Public Libraries." The principles in both cases are identical.


DR SCHOOL BOARD OF

CASH RECEIPTS

Date	Name and Particulars	Voucher No	Fees	Gov't Grant	County Grant	Township Grant	Local Municipal Grant	Debentures Specific No	Sundries				Total

SCHOOL BOARD OF CR

CASH PAYMENTS

Date	Name and Particulars	Voucher No	Amount	Balance Cash on Hand	Teachers Salaries	Other Salaries	Fuel & Care of &c.	Repairs	Examination Expenses	Printing Delivery &c.	Examination Papers & Diplomas &c.	Insurance	Debenture & Specific No	School Bldg. & Site	Sundries		Total

Form 29.—Public School Accounts.

CHAPTER XIII.

Debentures.

Debentures and bonds are ordinarily issued upon either one of two methods: "Sinking Fund" and "Instalment or Annuity." Which of these methods is the better has been a moot question, and it depends altogether upon whether you are the purchaser or the seller of the securities which position you may feel disposed to take. For myself I have very decided views upon the subject, looking at it from the standpoint of the municipality.

SINKING FUND.

In the case of "sinking fund" debentures, no part of the principal is repaid to the holder or purchaser during the currency of the bonds. The full amount of interest and a portion of the principal is annually collected. The interest is paid to the debenture holder. The principal is paid into an account known as the sinking fund, which fund must be made to earn a rate of interest equal to that calculated at the time of issuing and this is compounded yearly or half yearly during the whole period of existence of the debt, so that at maturity of the debentures there will be in this fund just sufficient to repay the principal. With the rates of interest varying, it so happens that often it is not possible to make the sinking fund earn the amount contemplated, or it may be that too high a rate of interest was allowed in the calculation.

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Each year, before placing in the estimates the amount required to be raised for the sinking fund, a valuation should be made to ascertain whether the existing investments have amounted to the sum originally intended as that which should be on hand at that date. If deficient it must be augmented by adding the necessary amount to the ordinary yearly appropriation.

If precautions are taken, and fractional adjustments are made from year to year, there will be no possibility of finding the sinking fund short when the debentures mature.

A common practice is to calculate the interest earning power of the sinking fund at the same rate as the debentures bear, and this is a pit into which many municipalities stumble. There are many reasons why it is not possible to make the sinking fund earn interest equal to that which must be paid on the debentures, chief among which is lack of investment. The amounts being small and accumulating annually, it is impossible to keep the fund continually invested at a rate of interest higher than that which can be obtained by deposit in the ordinary savings bank. It follows that no matter what rate of interest it may be necessary to make the debentures bear, it is well that the sinking fund's interest-earning power should not be calculated at a rate higher than ordinary savings bank interest.

INSTALLMENT OR ANNUITY.

The "instalment" or "sliding scale" debentures are figured so that equal payments during the period which the debentures have to run of principal and interest, will be made. The first year's payment will obviously be largely interest and very little principal. The second, a little less interest and more principal. Each year the interest decreases and the principal increases, until in the final year the payment is mostly principal. It will be observed that the difference between the two forms of debenture is, that in the first case the investor accepts only the interest earned each year, leaving the principal in the hands of the municipality for reinvestment. In the second case the investor is himself under the necessity of finding his own source of reinvestment for the principal which he receives year by year.

The system of sinking funds originated because investors were averse to buying debentures which provided for the return yearly of a portion of the principal, necessitating the trouble of the reinvestment of small amounts. At any rate, debentures of such a character brought a less price in the market, and hence the introduction of the sinking fund idea, which placed the onus of reinvestment upon the shoulders of the persons or corporations obtaining the loan, thus giving the capitalist the advantage of a longer and, to him, more satisfactory investment. This condition of affairs originated when rates of interest were much higher than now, and money less plentiful. The day of the sinking fund is past, however, the difference in the price obtainable for debentures of the two kinds being so slight that the trouble of maintaining the sinking fund largely exceeds the paltry difference in the proceeds of the sales. With a thorough sense of the responsibility attaching to the position which I take, I have no hesitation in saying that the sinking fund is a curse to the average municipality. Lack of knowledge of finances, inability to keep the sinking fund profitably invested, the manipulation of the fund by designing and dishonest officials, ignorance in computing the earning power; these are

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principally the causes which lead to the conclusion voiced in the preceding sentence. In these days of cheap money, with capitalists on the alert for safe investments, and with the keen competition that exists in the money market, it makes but little difference which kind of debenture is issued, in-so-far as the sale of the securities is concerned. Indeed, however, as the following illustration will show, the issuing of sinking fund debentures is the more expensive method of providing funds: Let us take a loan of $25,000 for twenty years at 4 per cent. On the annuity plan the sum of $1,839.55 per annum will require to be raised for twenty years, to cover both principal and interest. On the sinking fund plan your annual interest payment will be $1,000.00, and for the sinking fund, calculated at 3%, $930.40, or $1,930.40 in all—which is $90.85 in excess of your requirements under the annuity. This means, with interest, compounded, for twenty years, a direct loss to the rate-payers of over $2,500.00, or 10% of the entire loan. And even here we are pre-supposing the prompt deposit on the exact date , of the annual amount in the sinking fund, and that not one day of interest-earning power shall be lost, something which we know to be so rare as to be practically impossible in the average municipality.

THE RATE OF INTEREST.

Many municipalities are in the habit of issuing debentures bearing a higher rate of interest than the money can be obtained for. This, presumably, is done in order that a good premium may be obtained, the officials laboring under the misconception that the obtaining of a large premium gives the public a more exalted idea of the excellence of credit which the municipality enjoys in the financial world. A careful study of the money markets at the time the debentures are ripe for sale will enable the officials charged with that duty to decide pretty accurately upon the lowest rate of interest which the debentures may be made to bear, in order to find a purchaser at par. A low rate of interest and no premium is much preferable to a large premium with a corresponding increase in the interest rate. As a matter of fact investors often take advantage of the ignorance of officials not familiar with calculations of this character, and,, under the cloak of an apparently large premium, they pay less for the debentures than if they had been compelled to bid on an issue bearing the current rate of interest and netting par.

THE QUESTION OF PREMIUMS.

There is also a greater evil than this in connection with the question of premiums. Many councils and officials are possessed of the mistaken idea that premiums of whatever sort are the cimmon property of the municipality. The consequence is that in the case of local improvements, the general funds receive the benefit of the premium while the interested property owners pay the piper. It is obvious, therefore, that the obtaining of a premium is not always a benefit to those most immediately concerned. The natural application of any premium or surplus arising out of the sale of debentures issued on other than general account, is toward the payment of the first principal or interest which falls due on account of these particular debentures, a pro-rata reduction being made in the assessments against the various property holders for that particular year.

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SINKING FUND INVESTMENTS.

The statute authorizes municipalities to invest the sinking funds in government securities, municipal debentures, their own or their neighbors, and first mortgages, at the pleasure of the investing body. The fullest information should be kept of all such investments, and a ledger should be provided, which will furnish all the facts. It matters not particularly what the form, if information be given as to date of loan, amount, description of property, certificate of valuation, and of solicitor, and such other details as the circumstances surrounding each particular case, and the nature of the investment, may seem to require.

CHAPTER XIV.

Tabular Computations.

In every municipal corporation public works are undertaken requiring the issuing of debentures or bonds to provide the necessary funds for the carrying out of the works. It becomes of the greatest importance, therefore, that the officials charged with the issuing of these securities should be possessed of the information to enable them to quickly and correctly make the necessary calculations as to the annual amounts to be levied.

SINKING FUND TABLES.

In the Sinking Fund Table herewith is shown the amount of sinking fund necessary to be set aside annually to provide the required amount to any rate of interest from 2 to 6 per cent. for any number of years, at the end of which debentures are ordinarily made payable. Purchasers of debentures are, by recourse to this table, enabled to ascertain at a glance whether proper provision has been made in the by-law, under which the bonds or debentures have been issued, for the necessary amount of sinking fund.

INSTALMENT OR ANNUITY TABLES.

By far the greater part of the debentures issued at the present time are upon the instalment or annuity plan. In this way an equal annual payment is made. It is thus necessary to know what amount of principal must be paid off in each year, in order that the principal so paid, together with the interest, shall each year amount to the same sum. The tables which are presented in this volume are prepared to show the exact amount of interest and principal respectively, payable each year, in order to reduce to an equal annual sum the amount to be levied. To financiers generally, and to municipal clerks and engineers especially these tables will prove of inestimable value, enabling them to make the necessary calculations required in the issuing of debentures or bonds, in any sum, for periods of 5, 10, 15, 20, 25, and 30 years, at rates of interest of 2, 2½, 3, 3½, 4, 4½, 5, 5½ and 6 per cent.

Special tables have been prepared for 2, 3, and 4 years, at rates of interest of 2, 2½, 3, 3½, 4, 4½, 5, 5½ and 6 per cent. These will be found useful more particularly in the case of school sections, where short term debentures are frequently issued.

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COMPOUND INTEREST TABLE.

(One dollar interest.)

Included in the list of tabular computations is a table which shows readily the sum to which One dollar principal will increase at compound interest in any number of years from 1 to 40, at rates of 2, 2½, 3, 3½, 4, 4½, 5, 5½ and 6 per cent. per annum. Instructions for the finding of the sum to which any given amount will increase at compound interest at any of the rates of interest, and number of years expressed in the table, are also given.

COMPOUND INTEREST TABLE.

(One dollar deposited at end of each year.)

It frequently becomes a necessity to ascertain whether or not a sinking fund is being maintained at its proper standard. To do this in the ordinary course means a deal of figuring. By the use of the table appended the proper status of the fund at the end of any year may be obtained by a simple sum in multiplication as exemplified at foot of this table.

PROOF OF ANNUITY PAYMENTS.

Purchasers of bonds and debentures invariably require to satisfy themselves of the correctness of the sum provided in the by-laws as being required to be raised annually to meet the interest and principal of the debentures for which they are negotiating. The table on page 37 furnishes a simple means to this end; and it may furthermore be used to prove the correctness of his calculations by the clerk or financier issuing the bonds or debentures.

TABLE TO SHOW THE INTEREST-EARNING POWER OF STOCKS, BONDS AND DEBENTURES BOUGHT AT VARYING PRICES, EITHER ABOVE OR BELOW PAR.

In these days of close competition in the money markets of the world, the purchaser of securities is called upon at almost every turn to bid for bonds, stocks and debentures. The table on page 38 will enable such to tell at a glance the interest which investments will net, at varying purchase prices either at a discount or a premium, ranging from 50 to 150. The rule for ascertaining the value at any rate not included in the table is also given.

These tables are printed from plates revised by the author, so that there need be no question as to their correctness.

F. H. MACPHERSON, C. A.

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Debenture Instalment Tables.

Showing amount of Principal to be paid each year in order to reduce to an equal sum the amount to be levied each year for payment of Principal and Interest on an issue of $1,000,000.

2 Per Cent.—5 Years.

Debentures bearing 2 per cent. Interest, Payable in 5 Yearly Instalments.

EQUAL ANNUAL PAYMENT, $212,158.41.

Each Year.	Interest.	Principal.
1	$20000 00	$192158 41
2	16156 83	196001 58
3	12236 80	199921 61
4	8238 36	203920 05
5	4160 06	207998 35
		$1000000 00

2 Per Cent.—10 Years.

Debentures bearing 2 per cent. Interest, Payable in 10 Yearly Instalments.

EQUAL ANNUAL PAYMENT, $111,326.54.

Each Year.	Interest.	Principal.
1	$20000 00	$ 91326 54
2	18173 49	93153 05
3	16310 43	95016 11
4	14410 10	96916 44
5	12471 78	98854 76
6	10494 68	100831 86
7	8478 04	102848 50
8	6421 07	104905 47
9	4322 96	107003 58
10	2182 85	109143 69
		$1000000 00

2 Per Cent.—15 Years.

Debentures bearing 2 per cent. Interest, Payable in 15 Yearly Instalments.

EQUAL ANNUAL PAYMENT, $77,825.47.

Each Year.	Interest.	Principal.
1	$20000 00	$57825 47
2	18843 49	58981 98
3	17663 85	60161 62
4	16460 61	61364 86
5	15233 32	62592 15
6	13981 48	63843 99
7	12704 60	65120 87
8	11402 18	66423 29
9	10073 71	67751 76
10	8718 68	69106 79
11	7336 54	70488 93
12	5926 76	71898 71
13	4488 79	73336 68
14	3022 06	74803 41
15	1525 98	76299 49
		$1000000 00

2 Per Cent.—20 Years.

Debentures bearing 2 per cent. Interest, Payable in 20 Yearly Instalments.

EQUAL ANNUAL PAYMENT, $61,156.72.

Each Year.	Interest.	Principal.
1	$20000 00	$41156 72
2	19176 86	41979 86
3	18337 27	42819 45
4	17480 98	43675 74
5	16607 36	44549 36
6	15716 38	45440 34
7	14807 57	46349 15
8	13880 59	47276 13
9	12935 06	48221 66
10	11970 63	49186 09
11	10986 91	50169 81
12	9983 51	51173 21
13	8960 05	52196 67
14	7916 12	53240 60
15	6851 31	54305 41
16	5765 20	55391 52
17	4657 37	56499 35
18	3527 38	57629 34
19	2374 79	58781 93
20	1199 06	59957 66
		$1000000 00

By giving the figures for an issue of $1000,000, exact amounts are exhibited. For amounts less than a million it is only necessary to take the same proportion of the above sums thus :

$10,000 requires exactly one-hundreth of above figures, viz. : For 10 years at 2 per cent :

1st Payment—Interest, $200.00; Principal, $913.26 ; total, $1113.26.

10th Payment—Interest, $21.83; Principal, $1091.43; total, $1113.26.

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2 Per Cent.—25 Years

Debentures bearing 2 per cent. Interest, Payable in 25 Yearly Instalments.

EQUAL ANNUAL PAYMENT, $51,220.44.

Each Year.	Interest.	Principal.
1	$20000 00	$31220 44
2	19375 59	31844 85
3	18738 69	32481 75
4	18089 06	33131 38
5	17426 43	33794 01
6	16750 54	34469 90
7	16061 15	35159 29
8	15357 96	35862 48
9	14640 71	36579 73
10	13909 12	37311 32
11	13162 90	38057 54
12	12401 74	38818 70
13	11625 37	39595 07
14	10833 47	40386 97
15	10025 73	41194 71
16	9201 84	42018 60
17	8361 46	42858 98
18	7504 28	43716 16
19	6629 96	44590 48
20	5738 15	45482 29
21	4828 50	46391 94
22	3900 67	47319 77
23	2954 27	48266 17
24	1988 95	49231 49
25	1004 46	50215 98
		$1000000 00

2 1-2 Per Cent.—25 Years.

Debentures bearing 2½ per cent. Interest, Payable in 25 Yearly Instalments.

EQUAL ANNUAL PAYMENT, $54,275.93.

Each Year.	Interest.	Principal.
1	$25000 00	$29275 93
2	24268 10	30007 83
3	23517 90	30758 03
4	22748 95	31526 98
5	21960 78	32315 15
6	21152 90	33123 03
7	20324 82	33951 11
8	19476 04	34799 89
9	18606 05	35669 88
10	17714 30	36561 63
11	16800 26	37475 67
12	15863 37	38412 56
13	14903 05	39372 88
14	13918 73	40357 20
15	12909 80	41366 13
16	11875 65	42400 28
17	10815 64	43460 29
18	9729 13	44546 80
19	8615 46	45660 47
20	7473 95	46801 98
21	6303 90	47972 03
22	5104 60	49171 33
23	3875 32	50400 61
24	2615 30	51660 63
25	1324 25	52951 68
		$1000000 00

2 Per Cent.—30 Years

Debentures bearing 2 per cent. Interest, Payable in 30 Yearly Instalments.

EQUAL ANNUAL PAYMENT. $44,649.93

Each Year.	Interest.	Principal.
1	$20000 00	$24649 93
2	19507 00	25142 93
3	19004 14	25645 79
4	18491 23	26158 70
5	17968 05	26681 88
6	17434 41	27215 52
7	16890 10	27759 83
8	16334 91	28315 02
9	15768 61	28881 32
10	15190 98	29458 95
11	14601 80	30048 13
12	14000 84	30649 09
13	13387 86	31262 07
14	12762 62	31887 31
15	12124 87	32525 06
16	11474 37	33175 56
17	10810 86	33839 07
18	10134 07	34515 86
19	9443 76	35206 17
20	8739 64	35910 29
21	8021 43	36628 50
22	7288 86	37361 07
23	6541 64	38108 29
24	5779 47	38870 46
25	5002 06	39647 87
26	4209 11	40440 82
27	3400 29	41249 64
28	2575 30	42074 63
29	1733 80	42916 13
30	875 82	43774 11
		$1000000 00

2 1-2 Per Cent. 20 Years.

Debentures bearing 2½ per cent. Interest, Payable in 20 Yearly Instalments.

EQUAL ANNUAL PAYMENT, $64,147.13

Each Year.	Interest.	Principal.
1	$25000 00	$39147 13
2	24021 32	40125 81
3	23018 18	41128 95
4	21989 95	42157 18
5	20936 02	43211 11
6	19855 75	44291 38
7	18748 46	45398 67
8	17613 49	46533 64
9	16450 15	47696 98
10	15257 73	48889 40
11	14035 49	50111 64
12	12782 70	51364 43
13	11498 59	52648 54
14	10182 38	53964 75
15	8833 26	55313 87
16	7450 41	56696 72
17	6032 99	58114 14
18	4580 14	59566 99
19	3090 96	61056 17
20	1564 63	62582 50
		$1000000 00

2 1-2 Per Cent.—5 Years.

Debentures bearing 2½ per cent. Interest, Payable in 5 Yearly Instalments.

EQUAL ANNUAL PAYMENT. $215,246.88.

Each Year.	Interest.	Principal.
1	$25000 00	$190246 88
2	20243 83	195003 05
3	15368 75	199878 13
4	10371 80	204875 08
5	5250 02	209996 86
		$1000000 00

2 1-2 Per Cent.—10 Years.

Debentures bearing 2½ per cent. Interest, Payable in 10 Yearly Instalments.

EQUAL ANNUAL PAYMENT, $114,258.78.

Each Year.	Interest.	Principal.
1	$25000 00	$89258 78
2	22768 53	91490 25
3	20481 27	93777 51
4	18136 84	96121 94
5	15733 79	98524 99
6	13270 66	100988 12
7	10745 96	103512 82
8	8158 14	106100 64
9	5505 62	108753 16
10	2786 99	111471 79
		$1000000 00

2 1-2 Per Cent.—15 Years.

Debentures bearing 2½ per cent. Interest, Payable in 15 Yearly Instalments.

EQUAL ANNUAL PAYMENT, $80,766.45.

Each Year.	Interest.	Principal.
1	$25000 00	$55766 45
2	23605 84	57160 61
3	22176 82	58589 63
4	20712 08	60054 37
5	19210 72	61555 73
6	17671 83	63094 62
7	16094 46	64671 99
8	14477 66	66288 79
9	12820 45	67946 00
10	11121 80	69644 65
11	9380 68	71385 77
12	7596 03	73170 42
13	5766 77	74999 68
14	3891 78	76874 67
15	1969 83	78796 62
		$1000000 00

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2 1-2 Per Cent.—30 Years.

Debentures bearing 2½ per cent. Interest, Payable in 30 Yearly Instalments.

EQUAL ANNUAL PAYMENT. $47,777.65.

Each Year.	Interest.	Principal.
1	$25000 00	$22777 65
2	24430 56	23347 09
3	23846 88	23930 77
4	23248 61	24529 04
5	22635 37	25142 28
6	22006 83	25770 82
7	21362 56	26415 09
8	20702 18	27075 47
9	20025 29	27752 36
10	19331 49	28446 16
11	18620 33	29157 32
12	17891 40	29886 25
13	17144 24	30633 41
14	16378 41	31399 24
15	15593 43	32184 22
16	14788 82	32988 83
17	13964 10	33813 55
18	13110 76	34658 89
19	12252 29	35525 36
20	11364 16	36413 49
21	10453 82	37323 83
22	9520 72	38256 93
23	8564 30	39213 35
24	7583 96	40193 69
25	6579 12	41198 53
26	5549 16	42228 49
27	4493 45	43284 20
28	3411 34	44366 31
29	2302 18	45475 47
30	1165 74	46611 91
		$1000000 00

3 Per Cent.—20 Years.

Debentures bearing 3 per cent. Interest, Payable in 20 Yearly Instalments.

EQUAL ANNUAL PAYMENT, $67,215.71

Each Year.	Interest.	Principal.
1	$30000 00	$37215 71
2	28883 53	38332 18
3	27733 56	39482 15
4	26549 10	40666 61
5	25329 10	41886 61
6	24072 50	43143 21
7	22778 20	44437 51
8	21445 08	45770 63
9	20071 96	47143 75
10	18657 64	48558 07
11	17200 90	50014 81
12	15700 46	51515 25
13	14155 00	53060 71
14	12563 18	54652 53
15	10923 60	56292 11
16	9234 84	57980 87
17	7495 41	59720 30
18	5703 80	61511 91
19	3858 45	63357 26
20	1957 89	65257 82
		$1000000 00

3 Per Cent.—5 Years.

Debentures bearing 3 per cent. Interest, Payable in 5 Yearly Instalments.

EQUAL ANNUAL PAYMENT, $218,354.58.

Each Year.	Interest.	Principal.
1	$30000 00	$188354 58
2	24349 36	194005 22
3	18529 20	199825 38
4	12534 44	205820 14
5	6359 90	211994 68
		$1000000 00

3 Per Cent.—10 Years.

Debentures bearing 3 per cent. Interest, Payable in 10 Yearly Instalments.

EQUAL ANNUAL PAYMENT, $117,230.51.

Each Year.	Interest.	Principal.
1	$30000 00	$87230 51
2	27383 08	89847 43
3	24687 66	92542 85
4	21911 38	95319 13
5	19051 80	98178 71
6	16106 44	101124 07
7	13072 72	104157 79
8	9947 98	107282 53
9	6729 51	110501 00
10	3414 53	113815 98
		$1000000 00

3 Per Cent.—15 Years.

Debentures bearing 3 per cent. Interest, Payable in 15 Yearly Instalments.

EQUAL ANNUAL PAYMENT, $83,766.58

Each Year.	Interest.	Principal.
1	$30000 00	$53766 58
2	28387 00	55379 58
3	26725 61	57040 97
4	25014 39	58752 19
5	23251 82	60514 76
6	21436 38	62330 20
7	19566 47	64200 11
8	17640 47	66126 11
9	15656 68	68109 90
10	13613 39	70153 19
11	11508 79	72257 79
12	9341 06	74425 52
13	7108 29	76658 29
14	4808 54	78958 04
15	2439 81	81326 77
		$1000000 00

3 Per Cent.—30 Years

Debentures bearing 3 per cent. Interest, Payable in 30 Yearly Instalments.

EQUAL ANNUAL PAYMENT. $51.019,26.

Each Year.	Interest.	Principal.
1	$30000 00	$21019 26
2	29369 42	21649 84
3	28719 92	22299 34
4	28050 94	22968 32
5	27361 89	23657 37
6	26652 17	24367 09
7	25921 16	25098 10
8	25168 22	25851 04
9	24392 68	26626 58
10	23593 89	27425 37
11	22771 13	28248 13
12	21923 68	29095 58
13	21050 81	29968 45
14	20151 76	30867 50
15	19225 74	31793 52
16	18271 93	32747 33
17	17289 51	33729 75
18	16277 62	34741 64
19	15235 37	35783 89
20	14161 86	36857 40
21	13056 14	37963 12
22	11917 24	39102 02
23	10744 18	40275 08
24	9535 93	41483 33
25	8291 43	42727 83
26	7009 57	44009 67
27	5689 30	45329 96
28	4329 40	46689 86
29	2928 71	48090 55
30	1486 18	49533 08
		$1000000 00

3 1-2 Per Cent.—20 Years.

Debentures bearing 3½ per cent. Interest, Payable in 20 Yearly Instalments.

EQUAL ANNUAL PAYMENT, $70,361.08

Each Year.	Interest.	Principal.
1	$35000 00	$35361 08
2	33762 36	36598 72
3	32481 41	37879 67
4	31155 62	39205 46
5	29783 43	40577 65
6	28363 21	41997 87
7	26893 28	43467 80
8	25371 91	44989 17
9	23797 29	46563 79
10	22167 56	48193 52
11	20480 78	49880 30
12	18734 97	51626 11
13	16928 06	53433 02
14	15057 90	55303 18
15	13122 29	57238 79
16	11118 94	59242 14
17	9045 46	61315 62
18	6899 41	63461 67
19	4678 26	65682 82
20	2379 46	67981 62
		$1000000 00

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3 Per Cent.—25 Years.

Debentures bearing 3 per cent. Interest, Payable in 25 Yearly Instalments.

EQUAL ANNUAL PAYMENT. $57,427.88.

Each Year.	Interest.	Principal.
1	$30000 00	$27427 88
2	26177 16	28250 72
3	28329 64	29098 24
4	27456 69	29971 19
5	26557 55	30870 33
6	25631 44	31796 44
7	24677 55	32750 33
8	23695 04	33732 84
9	22683 06	34744 82
10	21640 71	35787 17
11	20567 10	36860 78
12	19461 27	37966 61
13	18322 27	39105 61
14	17149 11	40278 77
15	15940 74	41487 14
16	14696 13	42731 75
17	13414 18	44013 70
18	12093 77	45334 11
19	10733 74	46694 14
20	9332 92	48094 96
21	7890 07	49537 81
22	6403 93	51023 95
23	4873 22	52554 66
24	3296 58	54131 30
25	1673 13	55754 75
		$1000000 00

3 1-2 Per Cent.—25 Years.

Debentures bearing 3½ per cent. Interest, Payable in 25 Yearly Instalments.

EQUAL ANNUAL PAYMENT, $60,674.04

Each Year.	Interest.	Principal.
1	$35000 00	$25674 04
2	34101 41	26572 63
3	33171 37	27502 67
4	32208 77	28465 27
5	31212 49	29461 55
6	30181 33	30492 71
7	29114 09	31559 95
8	28009 49	32664 55
9	26866 23	33807 81
10	25682 96	34991 08
11	24458 26	36215 78
12	23190 72	37483 32
13	21878 80	38795 24
14	20520 97	40153 07
15	19115 61	41558 43
16	17661 07	43012 97
17	16155 61	44518 43
18	14597 47	46076 57
19	12984 79	47689 25
20	11315 66	49358 38
21	9588 12	51085 92
22	7800 11	52873 93
23	5949 53	54724 51
24	4034 17	56639 87
25	2051 97	58622 07
		$1000000 00

3 1-2 Per Cent.—5 Years.

Debentures bearing 3½ per cent. Interest, Payable in 5 Yearly Instalments.

EQUAL ANNUAL PAYMENT, $221,481.38

Each Year.	Interest.	Principal.
1	$35000 00	$186481 38
2	28473 15	193008 23
3	21717 86	199763 52
4	14726 14	206755 24
5	7489 75	213991 63
		$1000000 00

3 1-2 Per Cent.—10 Years.

Debentures bearing 3½ per cent. Interest, Payable in 10 Yearly Instalments.

EQUAL ANNUAL PAYMENT, $120,241.37.

Each Year.	Interest.	Principal.
1	$35000 00	$85241 37
2	32016 55	88224 82
3	28928 68	91312 69
4	25732 74	94508 63
5	22424 94	97816 43
6	19001 36	101240 01
7	15457 96	104783 41
8	11790 54	108450 83
9	7994 76	112246 61
10	4066 17	116175 20
		$1000000 00

3 1-2 Per Cent.—15 Years.

Debentures bearing 3½ per cent. Interest, Payable in 15 Yearly Instalments.

EQUAL ANNUAL PAYMENT, $86,825.08

Each Year.	Interest.	Principal.
1	$35000 00	$51825 08
2	33186 12	53638 96
3	31308 76	55516 32
4	29365 68	57459 40
5	27354 61	59470 47
6	25273 14	61551 94
7	23118 82	63706 26
8	20889 11	65935 97
9	18581 35	68243 73
10	16192 82	70632 26
11	13720 69	73104 39
12	11162 03	75663 05
13	8513 83	78311 25
14	5772 93	81052 15
15	2936 31	83888 77
		$1000000 00

3 1-2 Per Cent.—30 Years

Debentures bearing 3½ per cent. Interest, Payable in 30 Yearly Instalments.

EQUAL ANNUAL PAYMENT. $54:371,34.

Each Year.	Interest.	Principal.
1	$35000 00	$19371 34
2	34322 00	20049 34
3	33620 28	20751 06
4	32893 99	21477 35
5	32142 28	22229 06
6	31364 26	23007 08
7	30559 02	23812 32
8	29725 59	24645 75
9	28862 98	25508 36
10	27970 19	26401 15
11	27046 15	27325 19
12	26089 77	28281 57
13	25099 91	29271 43
14	24075 41	30295 93
15	23015 05	31356 29
16	21917 58	32453 76
17	20781 70	33589 64
18	19606 06	34765 28
19	18389 28	35982 06
20	17129 91	37241 43
21	15826 46	38544 88
22	14477 39	39893 95
23	13081 10	41290 24
24	11635 95	42735 39
25	10140 20	44231 14
26	8592 11	45779 23
27	6989 84	47381 50
28	5331 48	49039 86
29	3615 09	50756 25
30	1839 17	52532 17
		$1000000 00

4 Per Cent.—20 Years.

Debentures bearing 4 per cent. Interest, Payable in 20 Yearly Instalments.

EQUAL ANNUAL PAYMENT, $73,581.75.

Each Year.	Interest.	Principal.
1	$40000 00	$33581 75
2	38656 73	34925 02
3	37259 73	36322 02
4	35806 85	37774 90
5	34295 85	39285 90
6	32724 41	40857 34
7	31090 11	42491 64
8	29390 45	44191 30
9	27622 81	45958 94
10	25784 45	47797 30
11	23872 56	49709 19
12	21884 19	51697 66
13	19816 29	53765 46
14	17665 67	55916 08
15	15429 03	58152 72
16	13102 92	60478 83
17	10683 77	62897 98
18	8167 85	65413 91
19	5551 29	68030 47
20	2830 07	70751 69
		$1000000 00

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4 Per Cent.—5 Years

Debentures bearing 4 per cent. Interest, Payable in 5 Yearly Instalments.

EQUAL ANNUAL PAYMENT, $224,627.11.

Each Year.	Interest.	Principal.
1	$40000 00	$184627 11
2	32614 92	192012 19
3	24934 42	199692 69
4	16946 71	207680 40
5	8639 50	215987 61
		$1000000 00

4 Per Cent.—10 Years.

Debentures bearing 4 per cent. Interest, Payable in 10 Yearly Instalments.

EQUAL ANNUAL PAYMENT, $123,290.95.

Each Year.	Interest.	Principal.
1	$40000 00	$83290 95
2	36668 37	86622 58
3	33203 46	90087 49
4	29599 96	93690 99
5	25852 33	97438 62
6	21954 78	101336 17
7	17901 33	105389 62
8	13685 75	109605 20
9	9301 54	113989 40
10	4741 96	118548 98
		$1000000 00

4 Per Cent.—15 Years

Debentures bearing 4 per cent. Interest, Payable in 15 Yearly Instalments.

EQUAL ANNUAL PAYMENT. $89,941.10

Each Year.	Interest.	Principal.
1	$40000 00	$49941 10
2	38002 36	51938 74
3	35924 81	54016 30
4	33764 16	56176 94
5	31517 08	58424 03
6	29180 12	60760 98
7	26749 68	63191 43
8	24222 02	65719 08
9	21593 26	68347 85
10	18859 34	71081 76
11	16016 07	73925 03
12	13059 07	76882 03
13	9983 79	79957 31
14	6785 50	83155 60
15	3459 28	86481 82
		$1000000 00

4 Per Cent. 25 Years.

Debentures bearing 4 per cent. Interest, Payable in 25 Yearly Instalments.

EQUAL ANNUAL PAYMENT, $64,011.96.

Each Year.	Interest.	Principal.
1	$40000 00	$24011 96
2	39039 52	24972 44
3	38040 62	25971 34
4	37001 77	27010 19
5	35921 36	28090 60
6	34797 74	29214 22
7	33629 17	30382 79
8	32413 86	31598 10
9	31149 94	32862 02
10	29835 46	34176 50
11	28468 40	35543 56
12	27046 66	36965 30
13	25568 05	38443 91
14	24030 29	39981 67
15	22431 01	41580 96
16	20767 77	43244 20
17	19038 01	44973 96
18	17239 05	46772 92
19	15368 13	48643 84
20	13422 38	50589 59
21	11398 79	52613 18
22	9294 27	54717 70
23	7105 56	56906 41
24	4829 30	59182 67
25	2462 00	61549 97
		$1000000 00

4 1-2 Per Cent.—25 Years.

Debentures bearing 4½ per cent. Interest, Payable in 25 Yearly Instalments.

EQUAL ANNUAL PAYMENT, $67,439.03.

Each Year.	Interest.	Principal.
1	$45000 00	$22439 03
2	43990 25	23448 78
3	42935 05	24503 98
4	41832 37	25606 66
5	40680 07	26758 96
6	39475 92	27963 11
7	38217 58	29221 45
8	36902 61	30536 42
9	35528 47	31910 56
10	34092 50	33346 53
11	32591 91	34847 12
12	31023 78	36415 25
13	29385 10	38053 93
14	27672 67	39766 36
15	25883 19	41555 84
16	24013 17	43425 86
17	22059 01	45380 02
18	20016 91	47422 12
19	17882 91	49556 12
20	15652 89	51786 14
21	13322 51	54116 52
22	10887 27	56551 76
23	8342 44	59096 59
24	5683 09	61755 94
25	2904 08	64534 95
		$1000000 00

4 Per Cent.—30 Years.

Debentures bearing 4 per cent. Interest, Payable in 30 Yearly Instalments.

EQUAL ANNUAL PAYMENT, $57,830.10.

Each Year.	Interest.	Principal.
1	$40000 00	$1783010
2	39286 80	1854330
3	38545 07	1928503
4	37773 66	2005644
5	36971 41	2085869
6	36137 06	2169304
7	35269 34	22560 76
8	34366 90	23463 20
9	33428 38	24401 72
10	32452 31	25377 79
11	31437 20	26392 90
12	30381 48	27448 62
13	29283 54	28546 56
14	28141 67	29688 43
15	26954 14	30875 96
16	25719 10	32111 00
17	24434 66	33395 44
18	23098 84	34731 26
19	21709 59	36120 51
20	20264 77	37565 33
21	18762 16	39067 94
22	17199 44	40630 66
23	15574 21	42255 89
24	13883 98	43946 12
25	12126 13	45703 97
26	10297 97	47532 13
27	8396 69	49433 41
28	6419 35	51410 75
29	4362 92	53467 18
30	2224 23	55605 87
		$1000000 00

4 1-2 Per Cent.—20 Years.

Debentures bearing 4½ per cent. Interest, Payable in 20 Yearly Instalments.

EQUAL ANNUAL PAYMENT. $76,876.15.

Each Year.	Interest.	Principal.
1	$45000 00	$31876 15
2	43565 58	33310 57
3	42066 60	34809 55
4	40500 17	36375 98
5	38863 26	38012 89
6	37152 68	39723 47
7	35365 12	41511 03
8	33497 12	43379 03
9	31545 07	45331 08
10	29505 17	47370 98
11	27373 47	49502 68
12	25145 85	51730 30
13	22817 99	54058 16
14	20385 37	56490 78
15	17843 29	59032 86
16	15186 81	61689 34
17	12410 79	64465 36
18	9509 84	67366 31
19	6478 36	70397 79
20	3310 46	73565 69
		$1000000 00

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4 1-2 Per Cent.—5 Years.

Debentures bearing 4½ per cent. Interest, Payable in 5 Yearly Instalments.

EQUAL ANNUAL PAYMENT, $227,791.64.

Each Year.	Interest.	Principal.
1	$45000 00	$182791 64
2	36774 38	191017 26
3	28178 60	199613 04
4	19196 01	208595 63
5	9809 21	217982 43
		$1000000 00

4 1-2 Per Cent.—10 Years.

Debentures bearing 4½ per cent. Interest, Payable in 10 Yearly Instalments.

EQUAL ANNUAL PAYMENT, $126,378.83.

Each Year.	Interest.	Principal.
1	$45000 00	$81378 83
2	41337 95	85040 87
3	37511 11	88867 71
4	33512 07	92866 75
5	29333 06	97045 76
6	24966 00	101412 82
7	20402 43	105976 39
8	15633 49	110745 33
9	10649 95	115728 87
10	5442 15	120936 67
		$1000000 00

4 1-2 Per Cent.—15 Years.

Debentures bearing 4½ per cent. Interest, Payable in 15 Yearly Instalments.

EQUAL ANNUAL PAYMENT, $93,113.81.

Each Year.	Interest.	Principal.
1	$45000 00	$48113 81
2	42834 88	50278 93
3	40572 33	52541 48
4	38207 96	54905 85
5	35737 20	57376 61
6	33155 25	59958 56
7	30457 12	62656 69
8	27637 56	65476 25
9	24691 13	68422 68
10	21612 11	71501 70
11	18394 54	74719 27
12	15032 17	78081 64
13	11518 50	81595 31
14	7846 71	85267 10
15	4009 69	89104 12
		$1000000 00

4 1-2 Per Cent.—30 Years.

Debentures bearing 4½ per cent. Interest, Payable in 30 Yearly Instalments.

EQUAL ANNUAL PAYMENT, $61,391.55.

Each Year.	Interest.	Principal.
1	$45000 00	$16391 55
2	44262 39	17129 16
3	43491 57	17899 98
4	42686 07	18705 48
5	41844 33	19547 22
6	40964 71	20426 84
7	40045 50	21346 05
8	39084 93	22306 62
9	38081 13	23310 42
10	37032 16	24359 39
11	35935 99	25455 56
12	34790 49	26601 06
13	33593 44	27798 11
14	32342 52	29049 03
15	31035 32	30356 23
16	29669 29	31722 26
17	28241 78	33149 77
18	26750 04	34641 51
19	25191 18	36200 37
20	23562 16	37829 39
21	21859 83	39531 72
22	20080 91	41310 64
23	18221 93	43169 62
24	16279 30	45112 25
25	14249 24	47142 31
26	12127 84	49263 71
27	9910 97	51480 58
28	7594 35	53797 20
29	5173 47	56218 08
30	2643 66	58747 89
		$1000000 00

5 Per Cent.—20 Years.

Debentures bearing 5 per cent. Interest, Payable in 20 Yearly Instalments.

EQUAL ANNUAL PAYMENT, $80,242.59.

Each Year.	Interest.	Principal.
1	$50000 00	$30242 59
2	48487 87	31754 72
3	46900 14	33342 45
4	45233 02	35009 57
5	43482 54	36760 05
6	41644 53	38598 06
7	39714 63	40527 96
8	37688 23	42554 36
9	35560 52	44682 07
10	33326 41	46916 18
11	30980 60	49261 99
12	28517 50	51725 09
13	25931 25	54311 34
14	23215 68	57026 91
15	20364 34	59878 25
16	17370 42	62872 17
17	14226 81	66015 78
18	10926 03	69316 56
19	7460 20	72782 39
20	3821 08	76421 51
		$1000000 00

5 Per Cent.—5 Years.

Debentures bearing 5 per cent. Interest, payable in 5 Yearly Instalments.

EQUAL ANNUAL PAYMENT. $230,974.80.

Each Year.	Interest.	Principal.
1	$50000 00	$180974 80
2	40951 26	190023 54
3	31450 09	199524 71
4	21473 85	209500 95
5	10998 80	219976 00
		$1000000 00

5 Per Cent.—10 Years.

Debentures bearing 5 per cent. Interest, Payable in 10 Yearly Instalments.

EQUAL ANNUAL PAYMENT, $129,504.58.

Each Year.	Interest.	Principal.
1	$50000 00	$79504 58
2	46024 77	83479 81
3	41850 78	87653 80
4	37468 09	92036 49
5	32866 27	96638 31
6	28034 35	101470 22
7	22960 84	106543 73
8	17633 65	111870 92
9	12040 11	117464 46
10	6166 89	123337 68
		$1000000 00

5 Per Cent.—15 Years.

Debentures bearing 5 per cent. Interest, Payable in 15 Yearly Instalments.

EQUAL ANNUAL PAYMENT, $96,342.29.

Each Year.	Interest.	Principal.
1	$50000 00	$46342 29
2	47682 89	48659 40
3	45249 92	51092 37
4	42695 30	53646 99
5	40012 95	56329 34
6	37196 48	59145 81
7	34239 19	62103 10
8	31134 04	65208 25
9	27873 63	68468 66
10	24450 19	71892 10
11	20855 59	75486 70
12	17081 25	79261 04
13	13118 20	83224 09
14	8956 99	87385 30
15	4587 73	91754 56
		$1000000 00

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5 Per Cent.—25 Years.

Debentures bearing 5 per cent. Interest, Payable in 25 Yearly Instalments.

EQUAL ANNUAL PAYMENT, $70,952.46.

Each Year.	Interest.	Principal.
1	$50000 00	$20952 46
2	48952 38	22000 08
3	47852 38	23100 08
4	46697 37	24255 09
5	45484 62	25467 84
6	44211 23	26741 23
7	42874 16	28078 30
8	41470 25	29482 21
9	39996 14	30956 32
10	38448 32	32504 14
11	36823 11	34129 35
12	35116 65	35835 81
13	33324 86	37627 60
14	31443 48	39508 98
15	29468 03	41484 43
16	27393 81	43558 65
17	25215 87	45736 59
18	22929 04	48023 42
19	20527 87	50424 59
20	18006 64	52945 82
21	15359 35	55593 11
22	12579 70	58372 76
23	9661 06	61291 40
24	6596 49	64355 97
25	3378 69	67573 77
		$1000000 00

5 1-2 Per Cent.—25 Years.

Debentures bearing 5½ per cent. Interest, Payable in 25 Yearly Instalments.

EQUAL ANNUAL PAYMENT, $74,549.36.

Each Year.	Interest.	Principal.
1	$55000 00	$19549 36
2	53924 79	20624 57
3	52790 44	21758 92
4	51593 70	22955 66
5	50331 14	24218 22
6	48999 14	25550 22
7	47593 87	26955 49
8	46111 32	28438 04
9	44547 23	30002 13
10	42897 11	31652 25
11	41156 24	33393 12
12	39319 62	35229 74
13	37381 98	37167 38
14	35337 78	39211 58
15	33181 14	41368 22
16	30905 89	43643 47
17	28505 50	46043 86
18	25973 08	48576 28
19	23301 39	51247 97
20	20482 75	54066 61
21	17509 09	57040 26
22	14371 87	60177 48
23	11062 11	63487 24
24	7570 31	66979 04
25	3886 46	70662 89
		$1000000 00

5 Per Cent.—30 Years.

Debentures bearing 5 per cent. Interest, Payable in 30 Yearly Instalments.

EQUAL ANNUAL PAYMENT, $65,051.44.

Each Year.	Interest.	Principal.
1	$50000 00	$15051 44
2	49247 43	15804 01
3	48457 23	16594 21
4	47627 52	17423 92
5	46756 33	18295 11
6	45841 57	19209 87
7	44881 08	20170 36
8	43872 56	21178 88
9	42813 61	22237 83
10	41701 72	23349 72
11	40534 24	24517 20
12	39308 38	25743 06
13	38021 22	27030 22
14	36669 72	28381 72
15	35250 63	29800 81
16	33760 59	31290 85
17	32196 05	32855 39
18	30553 28	34498 16
19	28828 37	36223 07
20	27017 21	38034 23
21	25115 50	39935 94
22	23118 71	41932 73
23	21022 07	44029 37
24	18820 60	46230 84
25	16509 06	48542 38
26	14081 94	50969 50
27	11533 46	53517 98
28	8857 56	56193 88
29	6047 87	59003 57
30	3097 69	61953 75
		$1000000 00

5 1-2 Per Cent.—20 Years

Debentures bearing 5½ per cent. Interest, Payable in 20 Yearly Instalments.

EQUAL ANNUAL PAYMENT, $83,679.33.

Each Year.	Interest.	Principal.
1	$55000 00	$28679 33
2	53422 64	30256 69
3	51758 52	31920 81
4	50002 87	33676 46
5	48150 67	35528 66
6	46196 59	37482 74
7	44135 04	39544 29
8	41960 11	41719 22
9	39665 55	44013 78
10	37244 79	46434 54
11	34690 89	48988 44
12	31996 53	51682 80
13	29153 97	54525 36
14	26155 08	57524 25
15	22991 25	60688 08
16	19653 40	64025 93
17	16131 97	67547 36
18	12416 87	71262 46
19	8497 43	75181 90
20	4362 43	79316 90
		$1000000 00

5 1-2 Per Cent.—5 Years.

Debentures bearing 5½ per cent. Interest, Payable in 5 Yearly Instalments.

EQUAL ANNUAL PAYMENT, $234,176.44.

Each Year.	Interest.	Principal.
1	$55000 00	$179176 44
2	45145 30	189031 14
3	34748 59	199427 85
4	23780 06	210396 38
5	12208 25	221968 19
		$1000000 00

5 1-2 Per Cent.—10 Years.

Debentures bearing 5½ per cent. Interest, Payable in 10 Yearly Instalments.

EQUAL ANNUAL PAYMENT, $132,667.77.

Each Year.	Interest.	Principal.
1	$55000 00	$77667 77
2	50728 28	81939 49
3	46221 60	86446 17
4	41467 06	91200 71
5	36451 02	96216 75
6	31159 10	101508 67
7	25576 13	107091 64
8	19686 09	112981 68
9	13472 09	119195 68
10	6916 33	125751 44
		$1000000 00

5 1-2 Per Cent.—15 Years.

Debentures bearing 5½ per cent. Interest, Payable in 15 Yearly Instalments.

EQUAL ANNUAL PAYMENT, $99,625.60.

Each Year.	Interest.	Principal.
1	$55000 00	$44625 60
2	52545 60	47080 00
3	49956 19	49669 41
4	47224 38	52401 22
5	44342 31	55283 29
6	41301 73	58323 87
7	38093 92	61531 68
8	34709 67	64915 93
9	31139 30	68486 30
10	27372 55	72253 05
11	23398 63	76226 97
12	19206 15	80419 45
13	14783 08	84842 52
14	10116 74	89508 86
15	5193 75	94431 85
		$1000000 00

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5 1-2 Per Cent.—30 Years

Debentures bearing 5½ per cent. Interest, Payable in 30 Yearly Instalments.

EQUAL ANNUAL PAYMENT.
$68,805.39

Each Year.	Interest.	Principal.
1	$55000 00	$13805 39
2	54240 70	14564 69
3	53439 65	15365 74
4	52594 53	16210 86
5	51702 93	17102 46
6	50762 30	18043 09
7	49769 93	19035 46
8	48722 98	20082 41
9	47618 44	21186 95
10	46453 16	22352 23
11	45223 79	23581 60
12	43926 80	24878 59
13	42558 48	26246 91
14	41114 90	27690 49
15	39591 92	29213 47
16	37985 18	30820 21
17	36290 07	32515 32
18	34501 73	34303 66
19	32615 03	36190 36
20	30624 56	38180 83
21	28524 61	40280 78
22	26309 17	42496 22
23	23971 88	44833 51
24	21506 03	47299 36
25	18904 57	49900 82
26	16160 02	52645 37
27	13264 53	55540 86
28	10209 78	58595 61
29	6987 02	61818 37
30	3587 01	65218 38
		$1000000 00

6 Per Cent.—20 Years.

Debentures bearing 6 per cent. Interest, Payable in 20 Yearly Instalments.

EQUAL ANNUAL PAYMENT,
$87,184.56.

Each Year.	Interest.	Principal.
1	$60000 00	$27184 56
2	58368 93	28815 63
3	56639 99	30544 57
4	54807 32	32377 24
5	52864 68	34319 88
6	50805 49	36379 07
7	48622 75	38561 81
8	46309 04	40875 52
9	43856 51	43328 05
10	41256 82	45927 74
11	38501 16	48683 40
12	35580 15	51604 41
13	32483 89	54700 67
14	29201 85	57982 71
15	25722 89	61461 67
16	22035 19	65149 37
17	18126 22	69058 34
18	13982 72	73201 84
19	9590 62	77593 94
20	4934 98	82249 58
		$1000000 00

6 Per Cent.—5 Years.

Debentures bearing 6 per cent Interest, payable in 5 Yearly Instalments.

EQUAL ANNUAL PAYMENT.
$237,396.40.

Each Year.	Interest.	Principal.
1	$60000 00	$177396 40
2	49356 22	188040 18
3	38073 80	199322 60
4	26114 45	211281 95
5	13437 53	223958 87
		$1000000 00

6 Per Cent.—10 Years.

Debentures bearing 6 per cent. Interest, Payable in 10 Yearly Instalments.

EQUAL ANNUAL PAYMENT.
$135,867.96.

Each Year.	Interest.	Principal.
1	$60000 00	$75867 96
2	55447 93	80420 03
3	50622 72	85245 24
4	45508 01	90359 95
5	40086 41	95781 55
6	34339 52	101528 44
7	28247 81	107620 15
8	21790 60	114077 36
9	14945 96	120922 00
10	7690 64	128177 32
		$1000000 00

6 Per Cent.—15 Years.

Debentures bearing 6 per cent. Interest, Payable in 15 Yearly Instalments.

EQUAL ANNUAL PAYMENT,
$102,962.77.

Each Year.	Interest.	Principal.
1	$60000 00	$42962 77
2	57422 24	45540 53
3	54689 81	48272 96
4	51793 43	51169 34
5	48723 27	54239 50
6	45468 90	57493 87
7	42019 27	60943 50
8	38362 66	64600 11
9	34486 65	68476 12
10	30378 08	72584 69
11	26023 00	76939 77
12	21406 62	81556 15
13	16513 25	86449 52
14	11326 28	91636 49
15	5828 09	97134 68
		$1000000 00

6 Per Cent.—25 Years.

Debentures bearing 6 per cent. Interest, Payable in 25 Yearly Instalments.

EQUAL ANNUAL PAYMENT,
$78,226.72.

Each Year.	Interest.	Principal.
1	$60000 00	$18226 72
2	58906 40	19320 32
3	57747 18	20479 54
4	56518 41	21708 31
5	55215 91	23010 81
6	53835 26	24391 46
7	52371 77	25854 95
8	50820 48	27406 24
9	49176 10	29050 62
10	47433 06	30793 66
11	45585 44	32641 28
12	43626 97	34599 75
13	41550 98	36675 74
14	39350 44	38876 28
15	37017 86	41208 86
16	34545 33	43681 39
17	31924 45	46302 27
18	29146 31	49080 41
19	26201 48	52025 24
20	23079 97	55146 75
21	19771 16	58455 56
22	16263 83	61962 89
23	12546 06	65680 66
24	8605 22	69621 50
25	4427 93	73798 79
		$1000000 00

6 Per Cent.—30 Years.

Debentures bearing 6 per cent. Interest, Payable in 30 Yearly Instalments.

EQUAL ANNUAL PAYMENT,
$72,648.91.

Each Year.	Interest.	Principal.
1	$60000 00	$12648 91
2	59241 07	13407 84
3	58436 60	14212 31
4	57583 86	15065 05
5	56679 96	15968 95
6	55721 82	16927 09
7	54706 20	17942 71
8	53629 63	19019 29
9	52488 48	20160 44
10	51278 85	21370 07
11	49996 65	22652 27
12	48637 51	24011 41
13	47196 82	25453 10
14	45669 70	26979 22
15	44050 94	28597 98
16	42335 07	30313 85
17	40516 23	32133 69
18	38588 27	34060 65
19	36544 64	36104 28
20	34378 38	38270 54
21	32082 15	40566 77
22	29648 14	43000 78
23	27068 09	45580 83
24	24332 24	48315 68
25	21434 30	51214 62
26	18361 42	54287 50
27	15104 17	57544 75
28	11651 49	60997 43
29	7991 64	64657 28
30	4112 21	68536 71
		$1000000 00

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PROOF OF ANNUITY PAYMENTS.

To ascertain the amount of annual instalment or levy for repayment of a loan of any amount with yearly interest as given hereunder.

Years.		2 per Cent.	2½ per Cent.	3 per Cent.
5	Divide amount of Loan by	4.7134	4.6458	4.5799
10	" "	8.9826	8.7526	8.5302
15	" "	12.8492	12.3814	11.9379
20	" "	16.3514	15.5892	14.8775
25	" "	19.5235	18.4244	17.4131
30	" "	22.3965	20.9303	19.6004

Years.		3½ per Cent.	4 per Cent.	4½ per Cent.
5	Divide amount of Loan by	4.5150	4.4518	4.3899
10	" "	8.3166	8.1108	7.9127
15	" "	11.5174	11.1184	10.7396
20	" "	14.2124	13.5903	13.0080
25	" "	16.4815	15.6221	14.8282
30	" "	18.3920	17.2920	16.2889

Years.		5 per Cent.	5½ per Cent.	6 per Cent.
5	Divide amount of Loan by	4.3251	4.2703	4.2123
10	" "	7.7217	7.5376	7.3601
15	" "	10.3796	10.0376	9.7122
20	" "	12.4622	11.9504	11.4699
25	" "	14.0939	13.4139	12.7833
30	" "	15.3724	14.5338	13.7648

Purchasers of debentures and bonds always require to satisfy themselves that the annual payment upon the debentures which they are buying has been correctly calculated. The above table furnishes a quick and certain check as to this. Example: Debentures for $10,000 at 4 per cent, 20 years, requires an equal annual payment of $735.82. To prove this by the table given: $10,000÷13.5903=$735.81$\frac{8}{10}$.

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TABLE

SHOWING THE ANNUAL INTEREST TO BE REALIZED FROM

Stocks, Bonds and Debentures

Bearing the interest given along the top, when purchased at the rate in the first or "price" column. Example: Stock paying annually 5 per cent if purchased at a 102 will net 4.90 per cent on the investment.

Price.	3 per Cent.	3½ per Cent.	4 per Cent.	4½ per Cent.	5 per Cent.	6 per Cent.	7 per Cent.
50	6.00	7.00	8.00	9.00	10.00	12.00	14.00
55	5.45	6.36	7.27	8.20	9.09	10.90	12.72
60	5.00	5.83	6.66	7.50	8.33	10.00	11.66
65	4.61	5.38	6.15	7.00	7.69	9.23	10.76
70	4.28	5.00	5.71	6.43	7.14	8.57	10.00
75	4.00	4.67	5.33	6.00	6.66	8.00	9.33
80	3.75	4.37	5.00	5.62	6.25	7.50	8.75
85	3.52	4.12	4.70	5.29	5.88	7.05	8.23
90	3.33	3.88	4.44	5.00	5.55	6.66	7.77
95	3.15	3 68	4.21	4.73	5.26	6.31	7.36
96	3.13	3.64	4.16	4.69	5.21	6.25	7.29
97	3.09	3.61	4.12	4.64	5.15	6.19	7.21
98	3.06	3.57	4.08	4.59	5.10	6.12	7.14
99	3.03	3.54	4.04	4.54	5.05	6.06	7.07
100	3.00	3.50	4.00	4.50	5.00	6.00	7.00
101	2.97	3.46	3.96	4.45	4.95	5.94	6.93
102	2.94	3.43	3.92	4.41	4.90	5.88	6.86
103	2.91	3.40	3.88	4.36	4.85	5.82	6.79
104	2.89	3.36	3.84	4.32	4.80	5.77	6.73
105	2.86	3.33	3.81	4.28	4.76	5.71	6.66
110	2.73	3.20	3.63	4.10	4.54	5.45	6.36
115	2.60	3.00	3.47	3.91	4.35	5.21	6.08
120	2.50	2.92	3.33	3.75	4.16	5.00	5.83
125	——	2.80	3.20	3.60	4.00	4.80	5.66
130	——	2.70	3.08	3.46	3.84	4.61	5.38
135	——	2.65	2.95	3.33	3.70	4.44	5.18
140	——	——	2.85	3.21	3.57	4.28	5.00
145	——	——	2 76	3.10	3.45	4.13	4.82
150	——	——	2.66	3.00	3.33	4.00	4.66

Rule to find the value at any rate not included in this table: Multiply the rate per cent the stock is bearing by 100 and divide by the price you wish to pay. The result will give the interest the investment will realize; or, divide by the rate of interest you wish the investment to realize, and the result will give the price to be paid for the stock.

Illustration: Stock bearing 4 per cent is wanted to realize 5 per cent: $4 \times 100 = 400 \div 5 = 80$, the price at which you must buy to realize 5 per cent; or stock bearing 6 per cent is purchased at 105, what will it realize: $6 \times 100 = 600 \div 105 = 5.70$ per cent.

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COMPOUND INTEREST TABLE.

COMPOUND INTEREST TABLE, ONE DOLLAR PRINCIPAL.—The sum to which one dollar principal will increase, at compound interest, in any number of years, not exceeding forty, at 2, 2½, 3, 3½, 4, 4½, 5, 5½ and 6 per cent per annum.

Years.	2 per Cent.	2½ per Cent.	3 per Cent.	3½ per Cent.	4 per Cent.	4½ per Cent.	5 per Cent.	5½ per Cent.	6 per Cent
1	1.020	1.025	1.030	1.035	1.040	1.045	1.050	1.055	1.060
2	1.040	1.051	1.061	1.071	1.082	1.092	1.103	1.113	1.124
3	1.061	1.077	1.093	1.109	1.125	1.141	1.158	1.174	1.191
4	1.082	1.104	1.126	1.147	1.170	1.193	1.216	1.239	1.262
5	1.104	1.131	1.159	1.188	1.217	1.246	1.276	1.307	1.338
6	1.126	1.160	1.194	1.229	1.266	1.302	1.340	1.379	1.419
7	1.148	1.189	1.230	1.272	1.316	1.361	1.407	1.455	1.504
8	1.171	1.218	1.267	1.317	1.369	1.422	1.477	1.535	1.594
9	1.195	1.249	1.305	1.363	1.423	1.486	1.551	1.619	1.689
10	1.219	1.280	1.344	1.411	1.480	1.553	1.629	1.708	1.791
11	1.243	1.312	1.384	1.460	1.539	1.623	1.710	1.802	1.898
12	1.268	1.345	1.426	1.511	1.601	1.696	1.796	1.901	2.012
13	1.293	1.378	1.469	1.564	1.665	1.772	1.886	2.006	2.133
14	1.319	1.413	1.513	1.619	1.732	1.852	1.980	2.116	2.261
15	1.345	1.448	1.558	1.675	1 802	1.935	2.079	2.232	2.397
16	1.372	1.484	1.605	1.734	1.874	2.022	2.183	2.355	2.540
17	1.400	1.521	1.653	1.795	1.949	2.113	2.292	2.485	2.693
18	1.428	1.560	1.703	1.858	2.027	2.208	2.407	2.621	2.854
19	1.456	1.599	1.754	1.923	2.118	2.308	2.527	2.766	3.026
20	1.485	1.638	1.806	1.990	2.192	2.412	2.653	2 918	3.207
21	1.515	1.679	1.860	2.060	2.280	2.520	2.786	3.078	3.400
22	1.546	1.721	1.916	2.132	2.371	2.634	2.925	3.248	3.604
23	1.576	1.764	1.974	2.206	2.466	2.752	3.072	3.426	3.820
24	1.608	1.809	2.033	2.284	2.565	2.876	3.225	3.615	4.049
25	1.640	1.853	2.094	2.363	2.667	3.005	3.386	3.813	4.292
26	1.673	1.900	2.157	2.446	2.774	3.141	3.556	4.023	4.549
27	1.706	1.948	2 221	2.532	2.885	3.282	3.733	4.244	4.822
28	1.741	1.996	2.288	2.620	3.000	3.430	3.920	4.478	5.112
29	1.775	2.046	2.357	2.712	3.120	3.584	4.116	4.724	5.418
30	1.811	2.097	2.428	2.807	3.245	3.745	4.322	4.984	5.743
31	1.847	2.150	2.500	2.905	3.375	3.914	4.538	5.258	6.088
32	1.884	2.204	2.575	3.006	3.510	4.090	4.765	5.547	6.453
33	1.922	2.259	2.652	3.111	3.650	4.274	5.003	5.852	6.841
34	1.960	2.315	2.732	3.221	3.796	4.466	5.253	6.174	7.251
35	1.999	2.373	2.814	3.333	3.948	4.667	5.516	6.514	7.686
36	2.039	2.433	2.898	3.450	4.106	4.877	5.792	6.872	8.147
37	2.080	2.493	2.985	3.571	4.270	5.097	6.081	7.250	8.636
38	2.122	2.556	3.075	3.696	4.441	5.326	6.385	7.649	9.154
39	2.164	2.620	3.167	3.825	4.619	5.566	6.705	8.069	9.704
40	2.207	2.685	3.262	3.960	4.803	5.816	7.040	8.513	10.286

To find the sum to which a given amount will increase at compound interest, at any of the rates per cent and number of years expressed in the above table:

Multiply the given amount by the sum to which one dollar will increase at the rate and for the number of years required, marking off as many decimals from the product as there are decimals in the multiplier and multiplicand.

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SINKING FUND INVESTMENT TABLE.

COMPOUND INTEREST TABLE—$1.00 per annum, deposited at end of year. This table gives the sum to which one dollar per annum, paid at the end of each year, will increase at compound interest, in any number of years up to forty, at 2, 2½, 3, 3½, 4, 4½, 5, 5½ and 6 per cent per annum.

Years.	2 per Cent.	2½ per Cent.	3 per Cent.	3½ per Cent.	4 per Cent.	4½ per Cent.	5 per Cent.	5½ per Cent.	6 per Cent
1	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2	2.020	2.025	2.030	2.035	2.040	2.045	2.050	2 055	2.060
3	3.060	3.076	3.091	3.106	3.122	3.137	3.153	3.108	3.184
4	4.122	4.153	4.184	4.215	4.246	4.278	4.310	4.342	4.375
5	5.204	5.256	5.309	5.362	5.416	5.471	5.526	5.581	5.637
6	6.308	6.388	6.468	6.550	6.633	6.717	6.802	6.888	6.975
7	7.434	7.547	7 662	7.779	7.898	8.019	8.142	8.267	8.394
8	8.583	8.736	8.892	9.052	9.214	9.380	9.549	9.722	9.897
9	9.755	9.955	10.159	10.368	10.583	10.802	11.027	11.256	11.491
10	10.949	11.203	11.464	11.731	12.006	12.288	12.578	12.875	13.181
11	12.168	12.483	12 808	13.142	13 486	13.841	14.207	14.583	14.972
12	13.412	13.796	14.192	14.602	15.026	15.464	15.917	16.385	16.870
13	14.680	15.140	15.618	16.113	16.627	17.160	17.713	18.287	18.882
14	15.973	16.519	17.086	17.677	18.292	18.932	19.599	20.292	21.015
15	17.293	17 932	18.598	19.296	20.024	20.784	21.579	22.409	23.276
16	18.639	19.380	20.157	20.971	21.825	22.719	23.657	24.641	25.673
17	20.012	20.864	21.762	22.705	23.698	24.742	25.840	26.996	28.213
18	21.412	22.386	23.414	24.499	25.645	26.855	28.132	29.481	30.906
19	22.840	23.946	25.117	26.357	27.671	29.064	30.539	32.103	33.760
20	24.297	25.545	26.870	28.279	29.778	31.371	33.066	34.868	36.786
21	25.783	27.183	28.676	30.269	31.969	33.783	35.719	37.786	39.993
22	27.299	28.863	30.537	32.329	34.248	36.303	38.505	40.864	43.392
23	28.845	30.584	32.453	34.460	36.618	38.937	41.430	44.112	46.996
24	30.422	32.349	34.426	36.066	39.083	41.689	44.502	47.538	50.816
25	32.030	34.158	36.459	38.950	41.646	44.565	47.727	51.153	54.865
26	33.671	36.012	38.553	41.313	44.312	47.571	51 113	54.966	59.156
27	35.344	37.912	40.709	43.759	47.084	50.711	54.669	58.989	63.706
28	37.051	39.860	42.931	46.290	49.968	53.993	58.403	63.233	68.528
29	38.792	41.856	45.219	48.911	52.966	57.423	62.323	67.711	73.640
30	40.568	43.902	47.575	51.622	56.085	61.007	66.439	72.435	79.058
31	42.379	46.000	50.003	54.429	59.328	64.752	70.761	77.419	84.802
32	44.227	48.150	50.503	57.334	62.701	68.666	75.299	82.677	90.890
33	46.111	50.354	55.078	60.341	66.210	72.756	80.064	88.225	96.343
34	48.034	52.613	57.730	63.453	69.858	77.030	85.067	94.077	104.184
35	49.994	54.928	60.462	66.674	73.652	81.497	90.320	100.251	111.435
36	51.994	57.301	63.276	70.007	77.598	86.164	95.836	106.765	119.121
37	54.084	59.734	66.174	73.458	81.702	91.041	101.628	113.637	127.268
38	56.115	07.222	69.159	77.029	85.970	96.138	107.709	120.887	135.904
39	58.237	63.478	72.234	80.725	90.409	101.464	114.095	128.536	145.058
40	60.402	63.740	75.401	84.550	95.026	107.030	120.800	136.606	154.762

To ascertain the amount which should be in a sinking fund at any given time, multiply the annual deposit by the amount which $1.00 earns in the time required at the rate per cent as found in the above table.

Example: Required to find amount which should be in a sinking fund (maturing in 20 years) at the end of the tenth year; annual deposit $250, at 3 per cent. One dollar for ten years at 3 per cent produces $11,464, and this multiplied by $250 = $2866.00, the amount which will be in the fund if it has been maintained at its proper standard.

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SINKING FUND TABLE.

Amounts to be set aside and invested yearly, for the following number of years respectively, at any rate of interest from 2 to 6 per cent, in order to produce ($1,000,000) one million dollars. ☞ INTEREST EARNED PAYABLE YEARLY.

Number of Years.	RATE OF INTEREST.									
	2	2¼	2½	2¾	3	3¼	3½	3¾	4	
	$ c	$ c	$ c	$ c	$ c	$ c	$ c	$ c	$ c	
5	192158 41	191200 21	190246 88	189298 22	188354 58	187415 60	186481 38	185551 89	184627 12	
6	158526 00	157534 90	156549 90	155570 84	154597 50	153629 97	152668 21	151712 20	150761 91	
7	134512 18	133500 30	132495 70	131497 46	130506 36	129522 04	128544 50	127573 70	126609 62	
8	116509 79	115484 65	114467 30	113457 93	112456 39	111462 63	110476 65	109498 40	108527 84	
9	102515 43	101481 75	100456 88	99440 95	98433 86	97435 55	96446 01	95465 17	94493 00	
10	91326 54	90287 67	89258 78	88239 76	87230 51	86231 07	85241 37	84261 35	83290 95	
15	57825 47	56788 53	55766 45	54759 18	53766 58	52788 58	51825 08	50875 95	49941 10	
20	41156 72	40142 08	39147 13	38171 73	37215 71	36278 88	35361 08	34462 10	33581 75	
25	31220 44	30235 99	29275 93	28339 98	27427 88	26539 33	25674 04	24831 70	24011 97	
30	24649 93	23699 35	22777 65	21884 42	21019 26	20181 72	19371 34	18587 63	17830 10	
40	16555 75	15677 38	14836 24	14031 52	13262 38	12527 94	11827 29	11159 46	10523 49	
50	11823 22	11018 36	10258 06	9540 92	8865 49	8230 28	7633 71	7074 22	6550 20	
60	8767 97	8035 33	7353 40	6720 02	6132 96	5589 94	5088 63	4626 70	4201 85	
70	6667 92	6004 58	5397 12	4842 19	4336 63	3877 27	3460 96	3084 57	2745 07	
75	5855 09	5225 55	4653 59	4135 61	3667 97	3247 03	2869 20	2530 98	2229 01	
80	5160 71	4563 77	4026 05	3543 43	3111 75	2726 91	2384 89	2081 85	1814 08	
90	4406 02	3511 26	3038 09	2621 25	2255 56	1936 01	1657 82	1416 46	1207 76	
100	3202 75	2725 94	2311 89	1954 18	1646 67	1383 51	1159 27	968 95	808 00	
	4¼	4½	4¾	5	5¼	5½	5¾	6		
	$ c	$ c	$ c	$ c	$ c	$ c	$ c	$ c		
5	183707 03	182791 64	181880 90	180974 80	180073 32	179176 44	178284 14	177396 40		
6	149817 31	148878 39	147945 11	147017 47	146095 42	145178 95	144268 03	143362 63		
7	125652 21	124701 47	123757 35	122819 82	121888 85	120964 42	120046 49	119135 02		
8	107564 93	106609 66	105661 96	104721 82	103789 18	102864 01	101946 28	101035 95		
9	93529 44	92574 48	91628 03	90690 08	89760 57	88839 46	87926 70	87022 24		
10	82330 12	81378 83	80436 99	79504 58	78581 52	77667 77	76763 27	75867 96		
15	49020 43	48113 81	47221 14	46342 29	45477 15	44625 60	43787 52	42962 77		
20	32719 84	31876 15	31050 47	30242 59	29452 28	28679 33	27923 50	27184 56		
25	23214 53	22439 03	21685 13	20952 46	20240 66	19549 35	18878 17	18226 72		
30	17098 25	16391 55	15709 46	15051 44	14416 94	13805 39	13216 24	12648 92		
40	9918 39	9343 15	8796 75	8278 16	7786 37	7320 35	6879 07	6461 54		
50	6060 05	5602 15	5174 90	4776 74	4406 09	4061 45	3741 33	3444 29		
60	3811 78	3454 26	3127 10	2828 19	2555 50	2307 07	2081 07	1875 73		
70	2439 52	2165 12	1919 17	1699 16	1502 69	1327 55	1171 67	1033 13		
75	1960 05	1721 04	1509 13	1321 61	1156 01	1010 03	881 55	768 67		
80	1578 12	1370 70	1188 80	1029 63	890 63	769 49	664 09	572 55		
90	1027 83	873 16	740 55	627 12	530 32	447 89	377 82	318 37		
100	672 36	558 40	462 92	383 14	316 64	261 32	215 41	177 36		

Explanatory: For amounts less than a million, the proportion of the above figures will give the required sum. Thus, for $20,000, payable in 20 years, the interest on the sinking fund assumed to be 3 per cent, take $37215.71 as that required for $1,000,000, and dividing by 100 we get $372.15¾ for $10,000, which multiplied by 2=$744.31½, the amount required for $20,000. In other words, the annual sinking fund given in the above table, multiplied by the amount of the debentures and divided by 1,000,000, gives the sinking fund required.

Attention is again called to the fact that it is unsafe to calculate on the sinking fund earning more than Savings Bank interest.

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SHORT TERM DEBENTURES.

2 Per Cent.—2 Years.
EQUAL ANNUAL PAYMENT,
$515,049.51.

Each Year.	Interest.	Principal.
1	$20000 00	$ 495049 51
2	10099 02	504950 49
		$1000000 00

2 Per Cent.—3 Years.
EQUAL ANNUAL PAYMENT,
$346,754.68

Each Year.	Interest.	Principal.
1	$20000 00	$ 326754 68
2	13464 90	333289 78
3	6799 14	339955 54
		$1000000 00

2 Per Cent.—4 Years.
EQUAL ANNUAL PAYMENT,
$262,623.64.

Each Year	Interest.	Principal.
1	$20000 00	$ 242623 64
2	15147 52	247476 12
3	10198 00	252425 64
4	5149 04	257474 60
		$1000000 00

2 1-2 Per Cent.—2 Years.
EQUAL ANNUAL PAYMENT,
$518,827.16.

Each Year.	Interest.	Principal.
1	$25000 00	$ 493827 16
2	12654 32	506172 84
		$1000000 00

2 1-2 Per Cent.—3 Years.
EQUAL ANNUAL PAYMENT,
$350,136.63.

Each Year.	Interest.	Principal.
1	$25000 00	$ 325136 63
2	16871 58	333265 05
3	8538 31	341598 32
		$1000000 00

2 1-2 Per Cent—4 Years.
EQUAL ANNUAL PAYMENT,
$265,817.62.

Each Year.	Interest.	Principal.
1	$25000 00	$ 240817 62
2	18979 56	246838 06
3	12808 60	253009 02
4	6482 32	259335 30
		$1000000 00

3 Per Cent.—2 Years.
EQUAL ANNUAL PAYMENT,
$522,610.84.

Each Year.	Interest.	Principal.
1	$30000 00	$ 492610 84
2	15221 68	507389 16
		$1000000 00

3 Per Cent.—3 Years.
EQUAL ANNUAL PAYMENT,
$353,530.36.

Each Year.	Interest.	Principal.
1	$30000 00	$ 323530 36
2	20294 08	333236 28
3	10297 00	343233 36
		$1000000 00

3 Per Cent.—4 Years.
EQUAL ANNUAL PAYMENT,
$269,026.87.

Each Year.	Interest.	Principal.
1	$30000 00	$ 239026 87
2	22829 14	246197 73
3	15443 26	253583 61
4	7835 08	261191 79
		$1000000 00

3 1-2 Per Cent.—2 Years.
EQUAL ANNUAL PAYMENT,
$526,400.49.

Each Year.	Interest.	Principal.
1	$35000 00	$ 491400 49
2	17800 98	508599 51
		$1000000 00

3 1-2 Per Cent.—3 Years.
EQUAL ANNUAL PAYMENT,
$356,931.59.

Each Year.	Interest.	Principal.
1	$35000 00	$ 321931 59
2	23732 39	333199 20
3	12062 38	344869 21
		$1000000 00

3 1-2 Per Cent.—4 Years.
EQUAL ANNUAL PAYMENT,
$272,250.17.

Each Year.	Interest.	Principal.
1	$35000 00	$ 237250 17
2	26696 24	245553 93
3	18101 85	254148 22
4	9202 49	263047 68
		$1000000 00

Per Cent.—2 Years.
EQUAL ANNUAL PAYMENT,
$530,196.07.

Each Year.	Interest.	Principal.
1	$40000 00	$ 490196 07
2	20392 14	509803 93
		$1000000 00

4 Per Cent.—3 Years.
EQUAL ANNUAL PAYMENT,
$360,348.53.

Each Year.	Interest.	Principal.
1	$40000 00	$ 320348 53
2	27186 05	333162 48
3	13859 54	346488 99
		$1000000 00

4 Per Cent.—4 Years.
EQUAL ANNUAL PAYMENT,
$275,490.24.

Each Year.	Interest.	Principal.
1	$40000 00	$ 235490 24
2	30580 39	244909 85
3	20783 99	254706 25
4	10596 58	264893 66
		$1000000 00

4 1-2 Per Cent.—2 Years.
EQUAL ANNUAL PAYMENT,
$533,996.47.

Each Year.	Interest.	Principal.
1	$45000 00	$ 488996 47
2	22992 94	511003 53
		$1000000 00

4 1-2 Per Cent.—3 Years.
EQUAL ANNUAL PAYMENT.
$363,773.86.

Each Year.	Interest.	Principal.
1	$45000 00	$ 318773 86
2	30654 95	333118 91
3	15666 63	348107 23
		$1000000 00

4 1-2 Per Cent.—4 Years.
EQUAL ANNUAL PAYMENT,
$278,744.49.

Each Year.	Interest.	Principal.
1	$45000 00	$ 233744 49
2	34481 49	244263 00
3	23489 66	255254 83
4	12006 81	266737 68
		$1000000 00

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5 Per Cent.—2 Years.
EQUAL ANNUAL PAYMENT.
$537,804.87,

Each Year.	Interest.	Principal.
1	$50000 00	$ 487804 87
2	25609 74	512195 13
		$1000000 00

5 1-2 Per Cent.—2 Years.
EQUAL ANNUAL PAYMENT.
$541,518.00.

Each Year.	Ineerest.	Principal.
1	$55000 00	$ 486618 00
2	28216 00	513382 00
		$1000000 00

6 Per Cent.—2 Years.
EQUAL ANNUAL PAYMENT.
$545,436.88.

Each Year.	Interest.	Principal.
1	$60000 00	$ 485436 88
2	30873 76	514563 10
		$1000000 00

5 Per Cent.—3 Years.
EQUAL ANNUAL PAYMENT.
$367,208.56.

Each Year.	Intarest.	Principal.
1	$50000 00	$ 317208 56
2	34139 57	333068 99
3	17486 11	349722 45
		$1000000 00

5 1-2 Per Cent.—3 Years.
EQUAL ANNUAL PAYMENT.
$370,654.57.

Each Year.	Interest.	Principal.
1	$55000 00	$ 315654 57
2	37638 99	333015 58
3	19324 72	351329 85
		$1000000 00

6 Per Cent.—3 Years.
EQUAL ANNUAL PAYMENT.
$374,109.81.

Each Year.	Interest.	Principal.
1	$60000 00	$ 314109 81
2	41153 41	332956 40
3	21176 02	352933 79
		$1000000 00

5 Per Cent.—4 Years.
EQUAL ANNUAL PAYMENT.
$282,011.56.

Each Year.	Interest.	Principal.
1	$50000 00	$ 232011 56
2	38399 42	243612 14
3	26218 81	255792 75
4	13428 01	268583 55
		$1000000 00

5 1-2 Per Cent.—4 Years.
EQUAL ANNUAL PAYMENT.
$285,294.82.

Each Year.	Interest.	Principal.
1	$55000 00	$ 230294 82
2	42333 78	242961 04
3	28970 92	256323 90
4	14874 58	270420 24
		$1000000 00

6 Per Cent.—4 Years.
EQUAL ANNUAL PAYMENT.
$288,591.80.

Each Year.	Interest.	Principal.
1	$60000 00	$ 228591 80
2	46284 50	242307 30
3	31746 05	256845 75
4	16336 65	272255 15
		$1000000 00

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PART V.

Corporation Accounting.

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Corporation Accounting.

CHAPTER I.

General Description of Corporations and their Objects.

WHAT IS A CORPORATION?

A PRIVATE corporation is a collection of individuals under a special denomination authorized by law to act as one person for certain specified purposes, and endowed by law with the capacity of perpetual succession, so that the corporate body remains the same so long as it exists, notwithstanding the changes in its individual membership.

Corporations are aggregate or sole. An aggregate corporation, as its name implies, consists of several persons united in one society, preserved by a succession of members. A corporation sole consists of only one person, who is made a body corporate and political, in order that he and his successors may possess that legal perpetuity which is denied to natural persons. These are few in number, being mainly officers empowered by statute to maintain action as successors, such as judges of probate and county treasurers. A minister of a parish, seized of parsonage lands in the right of his parish, holds the same to himself and successors, and has been held in law to be a sole corporation for that purpose. The grant, however, of corporate powers to one person and his associates, although not requiring him to take any associate before exercising the rights conferred, and thus virtually conferring upon him the power to exercise alone all the corporate functions thereby granted, does not make of him a corporation sole. The State has, in this case, created a corporation aggregate, and such it must remain. The governor of a state is also a quasi corporation sole, and other instances will doubtless suggest themselves to the reader.

CORPORATIONS ARE PUBLIC OR PRIVATE.

The chief distinction between public and private corporations is that over the former the legislature has exclusive and unrestricted control. As the guardian of public interests, it may create, modify or destroy such institutions. They are only the auxiliaries of the government in municipal rule, and nothing like a contract can be claimed to exist between them and the legislature, their objects and duties being incompatible with anything of the nature of a compact. Private corporations, on the other hand, are created by the granting of a charter, either under the general laws of the state or by special act of the legislature, which, in connection with the acceptance, by the corporation, of such charter, is regarded as a compact, binding upon the state so long as the body corporate faithfully fulfills its part.

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Generally speakng, public corporations are towns, cities, parishes, etc., existing for political purposes only, with powers to be exercised for the public good. Private corporations are such as banks, insurance companies, railroads, furnaces, mining or other organizations in which the stock is owned by individuals for their personal profit.

Railroad, turnpike, steamship and some other companies are frequently called quasi-public corporations, because of their public utility, and because the public have cerain rights therein, but nevertheless, they are private corporations. The state may own an interest in a company as one of the corporators, but does not, by such participation, identify itself with the corporation. Perhaps no institution in the world is so generally misunderstood in this respect as the Bank of England, which although so closely connected with, and so important a factor in, the financial politics of that country, is entirely a private corporation. Chief Justice Marshall says: "It is a sound principle of law that when a government becomes a partner in a trading company, it divests itself, so far as concerns the transactions of that company, of its sovereign character, and takes that of a private citizen." But where a corporation is composed exclusively of officers of the government, having no personal interest in such corporation, and only acting as the organ of the state, for the public good, it is a public corporation.

The general meaning of the word public must not be confounded with its legal sense in this connection. A turnpike, for instance, is for the public use and benefit, but the turnpike company is a private corporation. A hospital founded by private benefaction is, in point of law, a private corporation, although dedicated by its charter to public charity. And a college, founded and endowed in the same mahner, though for the general promotion of learning, is private.

A private corporation is further distinguishable from a municipal corporate body, by the irresponsibility of the members for the corporate debts beyond the amount of their interest in the corporate fund. Towns, etc., being established only for political and civil purposes, hold each member of the same liable in his private estate, his individual property being subject to taxation to meet the corporate needs.

Private corporations are of several kinds, the first division being into ecclesiastical and lay.

ECCLESIASTICAL CORPORATIONS

Are such as are incorporated for the promotion of religion, and usually established for the advantageous management of the property belonging to the church. They may be either sole or aggregate.

LAY CORPORATIONS

Are divided into eleemosynary and civil.

ELEEMOSYNARY CORPORATIONS

May be described as incorporated charities, their object being the perpetual distribution of benefits as directed by the founders. Under this head are such institutions as hospitals for the poor, asylums for the insane, etc. Also those colleges or schools whose members receive, from the funds of the institution, pecuniary assistance in meeting the expenses attending their academical

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course. Angell and Ames mention, as an instance of eleemosynary corporations, "Dartmouth College, in New Hampshire, because it was founded by private benefactors for the distribution of private contributions."

But most of our larger institutions of learning are not eleemosynary corporations, although they may owe their existence to private or public donations, because their funds are paid to professors and others as remuneration for services rendered, rewards for special proficiency, etc.; so that the benefits are earned by those who receive them, and by no means accepted as gifts of charity. Take, for example, Harvard College, the earliest known institution of the sort on this continent, whose invested funds have increased from the $2,000 (£400) given in A. D. 1636, by the English colonists, to the comfortable sum of about $4,000,000, almost entirely the result of private munificence. Notwithstanding the fact that its 14,000 alumni are decidedly the beneficiaries of these generous gifts, it is not eleemosynary, in our sense of the word. Nor it is a public corporation, although its charter of A. D. 1650 declared its object to be "the education of the English and Indian youth in knowledge and godliness," and its present alumni are gathered from every state in the Union.

CIVIL CORPORATIONS.

These corporations are sometimes public, as towns, etc., but they also embrace those numerous private corporations created for the building and operating of railroads, mining, smelting, banking, insurance, and an almost endless variety of other business, in the interest and for the profit of their stockholders. The term "Joint Stock Company" is frequently, but erroneously, applied to these institutions. Although in the statutes of Massachusetts those words meant a corporation, yet, generally speaking, they are a dangerous misnomer. A purchaser of stock in a joint stock company, properly so called, becomes a partner as well as a stockholder, and is as fully liable for the debts of the institution, and is a member of an ordinary co-partnership for those of his firm.

Cook says a joint stock company is "an association of persons for the purpose of business, having a capital stock divided into shares, and governed by articles of association which prescribe its objects, organization and procedure, and the rights can not release the members from their liability as partners to the creditors of the company." The definition given by Beach is, "A partnership whereof the capital is divided into shares which are transferable without the express consent of all the co-partners." I would advise anyone doing business with a joint stock company, to acquaint himself with the laws governing such bodies in the state wherein that particular company is located; for although they are now very generally recognized as legitimate organizations, yet this was not the case from 1720 to 1826, and I believe that in at least two states, Illinois and Louisiana, they are still held to be illegal. On the other hand, some state, New York for instance, have conferred upon these associations such extensive statutory privileges that they are almost corporations.

LIMITED PARTNERSHIPS.

A limited partnership still more nearly approaches the character of a private corporation. The statutes generally provide that limited partnerships may consist of one or more general partners whose liabilities are the

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same as in a common partnership; and of one or more special partners, who shall contribute to the common funds a specific sum in actual cash, after payment of which sum they shall not be further liable for the debts of the partnership. A deed or certificate setting forth this agreement in full, signed by all the partners, is registered in the public records of each county where the business is to be carried on, and publication made thereof in the newspapers or such other manner as the statutes may prescribe.

We have now seen that corporations are public or private; that private corporations are ecclesiastical or lay; that lay corporations are eleemosynary or civil; and how these last are to be distinguished from joint stock companies and limited partnerships.

CHAPTER II.

Organization of Corporations.

WHENEVER a corporation is to be formed it is usual for those interested to draw up certain papers, called articles of incorporation, and forward them to the secretary of state. He issues a permit of organization and after some preliminary steps the company is given a charter and is allowed to proceed to business. One of the most common steps to be taken before operations can be commenced is the announcement of the object of the company and also the amount of capital stock. The money contributed is called the capital stock, or the capital. Each member receives a paper, called a certificate of stock, signed by the officers of the corporation, stating what proportion of the capital is his. This amount need not all be paid in at one time, however, though, of course, at some time the whole amount of the capital must be paid into the company.

The reason is obvious: persons doing business with the company have a right to know just what the powers of the company are, and also they trust the company on the strength of the capital stock which they naturally suppose has actually been at some time in existence, though it need not all have been paid at one time. An illustration will make this a little more clear. Suppose that five persons wish to form a corporation, each one to take 20 shares of $100 par value each, making in all a capital stock of $10,000. Upon filing the articles with the secretary of state and getting permission to organize, each one of the five pays into the company 10 per cent of the amount he subscribed for. This might possibly be sufficient to start the business and possibly there would be no further call for payment on the stock. Perhaps after some years the corporation might get into difficulty and then the stockholders, whoever they might be at the time, would be liable for the unpaid portion of the stock, or at least sufficient of to satisfy the claim. The fact that the holder supposed it to be fully paid up, and paid value for it accordingly, does not render him the less liable. Of course the company can purchase at a fair value any patents or other tangible effects and issue stock to pay for them,

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The corporate body existing only in a legal sense must necessarily have some one to act for it, and this is accomplished by agents usually called the "Board of Directors," or "Trustees." Although by no means absolutely essential it has been the custom of the law to permit the stockholders to elect the directors, but it is only a matter of convenience and the fact does not change the relation of the stockholders to the corporation, which is solely a contract relation. They contribute their capital and in return get a share of the profits. The Board of Directors generally appoint the executive officers.

This brings us to a consideration of the powers of the officers of a corporation. The officers are empowered to act for the company in all matters within the scope of the object of the corporation, but beyond this they act only on their own responsibility and the company is not bound by their acts. It is right that this should be so as the stockholder advances money to the corporation to be used for a specific purpose and any business outside of that can only be a personal matter between the officer and the person doing business with him. Therefore before going into any extensive transaction with a corporation it is well to carefully ascertain the nature and extent of the corporate powers, or possibly after a considerable amount of money, etc., has been expended, some stockholder may come along with an injunction claiming that he contributed his money to the company for the purpose of railroading, or whatever the object might be, and not for trading in grain or making bicycles. Then the person doing business as he supposed with a corporation of unlimited credit hies him to a lawyer and soon discovers that the particular transaction in which he is interested is "ultra vires," or beyond the power of the corporation. He certainly has increased his knowledge of law and possibly his vocabulary, for which his lawyer charges him a good price (the more difficult and uncommon the name the higher the fee is usually). The officers may not even be liable, or if so, they may be worthless individually.

Sometimes it is not desirable to appear as the holder of stock in a corporation. Possibly the company may have been carelessly organized, or perhaps the stock has not been fully paid up. Of course if a person was contemplating purchasing the stock he would look to these and similar matters before closing the deal, but possibly he is only to become interested in the company to the extent of holding the stock as security for a debt. In such cases the better way is to take the certificate and a writing pledging the same and have such security entered on the books of the corporation. This effects the object desired and does not render the holder liable. It is surprising how many persons will take certificates of stock as security and simply hold them instead of going to the office of the corporation and seeing that the transfer is properly made, for in most cases unless this is done there is a possibility of considerable trouble and loss arising, as the records of the company are presumed to be correct.

A corporation is possessed of a perpetual existence, unless, as is usually the case, the law provides the time during which it can exercise the privileges accorded it. The charter may, however, be voluntarily forfeited, or under certain conditions it may be compelled to relinquish its privileges. Should all individual members withdraw or die, naturally the corporation ceases to exist owing to the lack of an agent to act for it.

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CHAPTER III.

Corporation Stock Account Books.

WHAT most troubles a novice in corporation book-keeping is, not in what book to make the entries, but how properly to make them, or how to make them at all; and inasmuch as no coherent method, aside from illustrative examples for the guidance of tyros, appears in the text books, our object is to attempt to formulate some general rules which will be helpful to beginners.

If the secretary or book-keeper of a corporation is uncertain as to the book in which he should enter the record of a particular transaction or class of transactions, he ought to make it a point to ascertain, if possible, the best practice in that regard. Is it the best practice to make the entries of the Capital Stock account in the "Stock Books" or in the "Books of Account?" Before a satisfactory answer could be made, the inquiry would be: What are "Stock Books" and what "Books of Account?"

It is to be taken for granted that the corporation to which reference has been and is being made is:

A private corporation for pecuniary profit.

That only one set of books of account are kept to show the results of the business; and

That the only books in which the stockholders' names exclusively appear are those which will show the officers of the corporation who are its stockholders and who are entitled to vote at stockholders' meetings.

In the United Kingdom the laws with respect to corporations are uniform, and are more stringent in their regulations than with us. It appears that certain books must be kept; that the books must be audited annually by a chartered auditor, and that the auditor's suggestions as to how the books should be kept are followed as a rule.

The Corporation stock books required by an English Public Company are as follows:

1. Register of Members.
2. Directors' Minute Book.
3. Minute Book of General Meetings.
4. Register of Transfers.
5. Register of Mortgages.
6. Register of Documents.
7. Share Certificate Book.
8. Seal Book.
9. Annual Summary of Capital Book.
10. Directors' Attendance Book.

Those required by an American Private Corporation are as follows:

1. Book of By-Laws.
2. Minute Book.
3. Stock Certificate Book.
4. Transfer Journal.
5. Transfer Ledger.
6. Bond Register.

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The Canadian practice as to the use of the "Stock Ledger" is thus explained:

"Stock Ledger." The use of a stock ledger will be apparent if you consider how difficult it would be to keep an account in the general ledger with the individual stockholders of a company who hold stock to-day and part with it to-morrow, as is done with the individual partners of an ordinary business whose interest is permanent. This book, therefore, contains nothing but the name and address of each shareholder, the number of shares of the capital stock of the company held by each, and the installments that have been paid upon them.

As a matter of fact these corporation stock books are very seldom used by small companies. In large companies where the stockholders are numerous and especially where shares have a market value they are undoubtedly unnecessary.

Under our system of incorporation through general laws, a corporation is created upon the execution, by persons desirous of incorporating, of articles of incorporation, the filing of such articles in certain designated offices, and the certification of same by specified public officers; when this instrument is executed, filed and certified to as required, the corporation instantly comes into legal existence.

Although now regularly formed, the corporation cannot act; being an artificial person, it must act by means of agents, and it has no agents. Incorporation must be followed by organization. Organization means:

1. The adoption, by the stockholders, of by-laws for the government of the corporation.

2. The election, by the directors, of officers to transact the corporation business.

3. The providing for payments to the capital stock, and for the issuance to the shareholder of evidences of their holdings, and the taking of such further steps as may be necessary to endow the legal entity with capacity to carry on the business for which it was created.

The Book of By-Laws is evidence that by-laws have been adopted.

The Minute Book is evidence of who the officers are, and of all other acts and proceedings of the Board of Directors.

The Transfer Journal and Transfer Ledger are evidence of who the stockholders are. Upon the original issue, and any subsequent transfers, the Stock Certificate Book, Transfer Journal, Transfer Ledger and seal are brought into requisition.

The registration of stock required by statutes serves a two-fold purpose, viz.:

To provide the corporation officers with a record of who are the members of the corporation; and

To provide creditors with a record of those who are individually liable in case the corporation becomes unable to meet its obligations. The general rule is that the books of the corporation furnish evidence as to what persons are entitled to the rights and privileges of stockholders, and as to whom creditors may look for payment in the event of the insolvency of the corporation. Creditors of a corporation are presumed to have relied upon the books.

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CHAPTER IV.

Illustrations of Opening Entries

EXAMPLE NO. I.

FOR THE sake of greater clearness in the entries let us assume that the authorized capital of the company is $100,000, divided into 1,000 shares of $100 each, that B. Brown has subscribed for 400 shares, S. Smith 300 shares and J. Jones 300 shares. We "open" the stock books by entering on the stock daybook:

Subscription	$100,000 00	
To capital stock.....		$100,000 00
For subscriptions as follows:		
B. Brown, 400 shares @ $100.....	$40,000 00	
S. Smith, 300 shares @ $100.....	30,000 00	
J. Jones, 300 shares @ $100.....	30,000 00	
Sunds to Subscription.:.....		$100,000 00
B. Brown, yr. sub. 400 shares.....	40,000 00	
S. Smith, yr. sub. 300 shares.....	30,000 00	
J. Jones, yr. sub. 300 shares.....	30,000 00	

Or subscription account may be omitted and the several subscribers charged with the amount of their subscriptions and capital stock credited direct. If we dispense with the stock day book, enter the same facts in full on the several accounts in the stock ledger, making it a book of original entry.

Our books are now "open" and record the facts. The several subscribers are indebted to the company for the amount of their subscriptions and the entire authorized capital of the company is invested in these accounts. All future entries are merely records of actual transactions or changes in position or form of the assets of the company. When the capital (or these accounts) is paid, we enter:

Paid-up capital	$100,000 00	
B. Brown, yr. sub. paid in full.....		$40,000 00
S. Smith, yr. sub. paid in full.....		30,000 00
J. Jones, yr. sub. paid in full.....		30,000 00

The stock ledger then has but two open accounts, Capital Stock, which is credited with the amount of the authorized and subscribed capital and "Paid-up Capital," which is debited with the amount of cash paid in. The closed accounts make a full and complete record of how, when and by whom the authorized capital was subscribed and paid up.

The "Paid-up Capital" is placed in the charge of the treasurer and we open our "Books of Account" by recording that fact:

J. Jones, treasurer.....	$100,000 00	
Paid-up Capital amt. cash capital.....		$100,000 00

All future entries are records of actual transactions.

The subscribers having paid their subscriptions are entitled to stock certificates in the usual form, which are transferable by assignment and delivery. It is unnecessary to waste space in describing these certificates or their stubs. Lithographed or printed forms are on sale by all stationers and any one of ordinary intelligence can hardly make a mistake in filling the blanks. The records must show original issues and subsequent transfers.

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Upon the surrender of the receipts (if any), given by the treasurer, when the cash was paid, certificates are issued, signed by the president and secretary, and we enter on the stock day book:

Sunds to Stock Certificates.....		$100,000 00
B. Brown, Certificate No. 1.....	$40,000 00	
J. Jones, Certificate No. 2.....	30,000 00	
S. Smith, Certificate No. 3.....	30,000 00	

Should Brown sell 100 shares of his stock to R. Robinson, certificate No. 1 would be returned to the company and cancelled, new certificates being issued, showing the new ownership and recorded thus:

Stock Certificates	$40,000 00	
B. Brown		$40,000 00
(Certificate No. 1 cancelled.)		
Sunds to Stock Certificate.....		$40,000 00
R. Robinson, Cert. No. 4 (For part of No. 1 cancelled)	$10,000 00	
B. Brown, Cert. No. 5 (For part of No. 1 cancelled)	30,000 00	

In the case under consideration, it is sometimes thought best to have the record of organization, subscription and payment of capital stock kept on the "Books of Account" and only use the stock book to record the issue and transfer of stock certificates. We would then open our book of account as follows:

Sunds to Capital Stock.....		$100,000 00
B. Brown, yr. sub.. 400 shares at $100.....	$40,000 00	
S. Smith, yr. sub. 300 shares at $100.....	30,000 00	
J. Jones, yr. sub. 300 shares at $100.....	30,000 00	

And when these accounts were paid:

J. Jones, treasurer, to.....	$100,000 00	
B. Brown, stock sub. paid in full.....		$40,000 00
S. Smith, stock sub. paid in full.....		30,000 00
J. Jones, stock sub. paid in full.....		30,000 00

A trial balance will now show exactly the same facts as the combined trial balance of the "Stock Ledger" and "Account Ledger" under the plan first suggested, viz.: Capital stock credited with amount of authorized and subscribed capital and treasurer debited with same amount, all other accounts being balanced, and our record of stock subscription and their payment is complete. In this particular case this is perhaps the better method. It is, however, for reasons which will be hereafter apparent, only available when the capital stock is all subscribed and all paid. Should this plan be adopted the issue and transfer of stock certificates may be entered on an ordinary stock day book and ledger in regular double entry form as before suggested or a "stock register," such as is sold by stationers, may be used. This register is ruled about as the following example in which the issues and transfers before illustrated, are filled in.

A column headed remarks might be added, in which are noted to whom certificates are transferred and what certificates are issued in place of certificates surrendered. There are some objections to this form and I prefer the regular double entry form before described.

All this is very simple and is the obvious method of proceeding when the capital is all paid in cash. But some one is sure to ask: "Suppose some or all of these subscriptions are paid by transfer of property, accounts or notes?" This does not alter the fact that the subscriptions are made and paid, and only changes the form in which they are paid and therefore the

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form of entry when they are paid. If they are paid in notes we would charge bills receivable instead of treasurer; if in property, charge real estate, merchandise, machinery or whatever account may be selected to represent the particular property acquired by the company; in each case crediting, as a matter of course, the individual or firm from whom the property, note or account receivable was received. If the company assumes liabilities they are of course debited to the person or firm previously liable and credited to the account selected to represent the particular form of liability assumed.

The transaction and the form of the entry is exactly the same whether property is bought by the company from one of its stockholders or from a stranger to the organization. The "company" is an entity or individual; it deals with all other individuals or firms as an individual and without reference to whether those individuals or firms do or do not have among their assets some of its stock or shares.

Many old business men and capitalists insist that the capital of all companies in which they are interested, shall be paid in cash or bank checks, and all property bought or acquired by the company shall be paid for with the check of its treasurer. In my judgment this is the only correct course. It makes the record clear, and the facts that subscriptions have been paid by the subscribers and the property in its possession paid for by the company stand out so plainly that they are practically unassailable.

Nor does this involve the use of actual "cash." If the subscriber gives a check on his own bank to the treasurer for the amount of his subscription, and the treasurer gives a check on the company's bank in payment for the property acquired by the company; then if the checks are of equal amounts and each deposits the check received in his own bank, both checks are good and each party has a cancelled bank check as a voucher if the transaction is ever questioned.

We are well aware that many book-keepers, even some who call themselves accountants, object to what they call the "extra work" and endeavor to make modern books of account a sort of "clearing house," in which only balances of indebtedness are entered. But stationery and book-keepers are both low-priced commodities and the clearing house method, as a rule, makes more, instead of less work in the end.

The corporation accountant, as such, has nothing to do with closing the books of the parties from whom his company purchases property, but if it should happen that the reader keeps both sets of books he will easily close the old books if he sees the facts as they are, and recognizes that firms are not and cannot be changed into corporations. Corporations are created and purchase property. The transaction is a sale at agreed figures, and is entered just like any other sale. It makes no whit of difference in the form of the entry in either old or new books whether the members of the old firm do or do not own stock in the newly created corporation or whether the interests of the old partners are the same in both concerns. The two concerns are legally and in fact separate and distinct entities. It is of no interest to the seller how the buyer enters the transaction if only he receive credit or is paid for the property sold; nor to the buyer how, at what value or in what name, the seller carried the property on his books, so long as he conveys a perfect title to the property and gives a receipt for the consideration agreed to be paid.

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EXAMPLE NO. 2.

Capital all subscribed but to be paid in at future dates already fixed or to be fixed by the directors.

If the dates are fixed in the original agreement, the case may be treated substantially as in Eample 1, but the charge to the individual subscribers must show the date on which the respective installments are payable. If the capital is subject to "call" by the directors, I deem it much better to use a stock day book and ledger. A typical case would be authorized capital and subscriptions as before, 10 per cent payable at organization, balance subject to "call." The opening entries are:

Subscription	$100,000 00	
Capital stock for sub. as follows		$100,000 00
B. Brown, 400 shares at $100	40,000 00	
S. Smith, 300 shares at $100	30,000 00	
J. Jones, 300 shares at $100	30,000 00	
Sundries to Subscription		$10,000 00
B. Brown, 10 per cent on 400 shares	4,000 00	
S. Smith, 10 per cent on 300 shares	3,000 00	
J Jones, 10 per cent on 300 shares	3,000 00	

Note that the subscription creates a present liability of the individual subscriber for only 10 per cent of his subscription. The remaining 90 per cent is in the nature of a contingent liability. It may be converted into an actual present liability, in whole or in part, by the future action of the board of directors or of a receiver, should the company be unfortunate enough to be thrown into a receivership. We therefore leave the uncalled part of the subscription in the "subscription account" and charge the individual subscribers with the 10 per cent which is presently payable.

When these accounts are paid we enter as before:

Paid up capital to Sundries	$10,000 00	
B. Brown, 10 per cent on 400 shares		$ 4,000 00
S. Smith, 10 per cent on 300 shares		3,000 00
J. Jones, 10 per cent on 300 shares		3,000 00

Should the directors order a call for a portion of the unpaid subscriptions payable at a named date in the future, say 20 per cent payable April 1st, we would enter on our stock day book:

Sundries to Subscription		$20,000 00
B. Brown, first call 20 per cent on 400 shares, due April 1	$ 8,000 00	
S. Smith, first call 20 per cent on 300 shares, due April 1	6,000 00	
J. Jones, first call 20 per cent on 300 shares, due April 1	6,000 00	

And as payments were made credit the individual and charge paid-up capital with amount of payments.

A trial balance of our stock ledger will then show:

Capital Stock		$100,000 00
Subscription	$ 70,000 00	
Paid-up capital	30,000 00	

The stock day book and the closed accounts on the stock ledger will show just when the "calls" were made and paid. Should any of the subscribers fail to pay the "calls" or assessments when the same are due, the unpaid amount will stand to the debit of his account on the stock ledger and Paid-up Capital account show that much less debit. The company can, in

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that case, either sue the delinquent for the amount as a debt past due and for which it has a lien on his stock, take the course prescribed by the statutes of the state in which the company is organized and the by-laws of the company itself for forfeiting and selling the shares of stock on which default has been made, or it can let it stand as a debit account on its stock ledger.

Since the shares of stock are not fully paid no certificates of stock can be issued. In place thereof the treasurer gives receipts, stating that the payment is, first 10 per cent, first call of 20 per cent as the case may be.

It is a familiar principal of law that a debtor cannot transfer his liability without the consent of the creditor. It follows that a subscriber for stock cannot assign or sell that stock so as to relieve himself of responsibility for the unpaid part of his subscription without the consent of the company. Therefore all assignments or transfers of partly paid stock are made upon

STOCK REGISTER.

Number	Name.	Issued.	No. of Shares	Par Value.	Surrendered.
1	B. Brown.....	Jan. 1, 1897	400	40000 00	Apr. 1, 1897
2	J. Jones.....	" 1, "	800	80000 00	
3	S. Smith.....	" 1, "	800	80000 00	
4	R. Robinson.....	Apr. 1, "	100	10000 00	
5	B. Brown.....	" 1, "	800	80000 00	

a book kept for that purpose in the office of the company. It may be an ordinary record book or a book of printed forms. The original subscriber, or present owner signs an assignment and transfer naming the assignee and the number of shares; the purchaser signs an acceptance of the stock and an agreement to pay all unpaid portions of the original subscriptions when legally "called"; and the company by its president and secretary signs a formal consent to the transfer. We enter such an assignment on our stock day book.

Subscription .....$.....
B. Brown, unpaid subscription for shares of
stock assigned to Robinson..... $.....
See transfer book folio.....

We also make a foot note on the original subscription paper (with star or other reference opposite the original signature) reciting same facts and referring to folio of transfer book where assignment is made.

"What responsibility or liability would attach to the officer or director assenting to the transfer of partly paid stock from a responsible original subscriber to an irresponsible assignee?" is an interesting legal question. It is, however, for the consideration of the persons damnified and the consenting officer, not the accountant.

If the company or its directors are not satisfied with the responsibility of the assignee they may refuse consent to the transfer and thus retain the company's claim against the original subscriber. Whether the original subscriber can transfer his interest in partly paid stock so as to resign his rights without divesting himself of his liability for future calls is another fine legal point which might be decided either way by the courts of the several states. Our interest as accountants, is how to record such an assignment, for if made or attempted to be made, we must enter it on our books. The situation is not very likely to arise, but is certainly among the possibilities. If I were

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secretary of a corporation and was notified of a transfer of partly paid stock to which the company refused consent, I would merely "note" the fact on the original subscription and on Subscription Account on my Stock ledger. Then if a dividend were declared or other proceedings taken which involved the ownership in the rights and benefits accruing to that stock I should refuse to pay that dividend or take any other action in the matter until the question of ownership had been decided by the courts. Should the directors (or officers having authority) order any different course I would obey orders, but should make the books and records show clearly not only what had been done, but that it had been done "by order."

The books of account in the case under consideration are opened exactly as Example 1, when Stock ledger is used, i. e., treasurer is charged with all money received on account of capital stock and Paid-up Capital credited.

The remarks as to payment of stock subscription by transfer of property or things other than cash, in discussing Example 1 apply with still more force to Example No. 2. Because it is of even greater importance to make the records show clearly exactly when and how payments are made on subscriptions and how much is still "subject to call" and who is responsible or liable when such "calls" are made. The uncalled and unpaid subscriptions are considered by the banks and other creditors as an addition to the responsibility of the company over and above its actual present assets. They operate as an endorsement or guaranty by each subscriber to the amount of his unpaid subscription, of the indebtedness of the company.

CHAPTER V.

Illustrations of Opening Entries.

ANOTHER METHOD.

SO MANY book-keepers of experience and skill in partnership accounting find themselves utterly at sea when confronted with the task of opening the books of a private corporation that a word in that connection may prove of use to some readers. All the ordinary books of account being the same in corporations as in partnerships, it is only necessary here to treat of those recording the transactions in capital stock, and it is presumed that a few simple suggestions will suffice.

The capital stock of a corporation is fixed in some instances by the charter which gives it existence, in others by the corporate officers. In either case, after the amount is once fixed, it can not be changed without authority of the state. It therefore follows that the "Capital Stock" account in the ledger, as representing such fixed amount, should itself stand unchanged either during the entire existence of the company, or until an amended charter authorizes its increase or decrease.

The book-keeper must inform himself first as to the amount of the authorized capital stock, which information he can obtain from the record (or minute) book, which should always contain a copy of the charter and the

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resolution under which it was accepted as such by the corporation.

We will suppose that, either by charter or resolution, the capital stock of the "Wilkins Manufacturing Company" has been fixed at $100,000, to be issued in shares of $100 each. By such charter, or resolution, a latent value has been created, which, until disposed of, remains in the treasury of the company. These facts are recorded by the first journal entry, as follows:

Treasury Stock	$100,000 00	
To Capital Stock		$100,000 00

with suitable reference to authority. The writer does not propose, here and now, to discuss the objections which some accountants urge against this form of opening, but confines himself to the statement that in many years of experience, with numerous corporations, he has found it the simplest and best.

It is usual, immediately upon organization, to determine by resolution how the stock shall be disposed of. If subscriptions thereto are to be taken, the incorporators may decide whether such subscriptions are to be paid at one time, or in installments, and upon what terms; or they may depute that power to the next board of directors. We will presume that in this instance it is decided that 25 per cent shall be paid November 1, 1897, 25 per cent in two months from that date, 25 per cent four months later, and the remainder when called for by the board of directors; and that business may be commenced when not less than $60,000 shall have been subscribed.

A subscription list is then opened in form as follows, and we will suppose signatures, etc., to be secured as thereon entered:

Date	Name and Address		No. of Shares	Amount
1897				
Oct. 25	Samuel Johnson	Nashville, Tenn	300	30000 00
" 25	John Shields	" "	100	10000 00
" 26	Wm. Cole	Clarksville, "	120	12000 00
" 26	Wm. Anderson	Columbia, "	115	11500 00
" 29	M. Bloomstein	Nashville, "	10	1000 00
" 29	C. Flisher	" "	50	5000 00
" 29	James Clarks	" "	5	500 00

SUBSCRIPTION LIST.

We, the undersigned, severally subscribe to the capital stock of the Wilkins Manufacturing Company in the amounts and for the number of shares set opposite our respective names, and agree to pay for the same as follows: Twenty-five per cent November 1, 1897; 25 per cent January 1, 1898; 25 per cent May 1, 1898; and the remainder when called for by the board of directors.

It is resolved now to commence operations, as we have $70,000 subscribed. The list, being of the utmost importance, is carefully preserved and the next journal entry follows:

Stock Subscriptions	$70,000 00	
To Treasury Stock		$70,000 00

with a list of subscribers and amounts. By this process we have disposed of $70,000 of the stock; $30,000 remains in the treasury for future disposition, and the capital stock remains properly at $100,000.

It is advisable to keep a small subsidiary ledger with the subscribers, credit Stock Subscription account in the general ledger, with all payments thereon, and credit the individuals in said subsidiary ledger. Almost any

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small book with money columns can be used for this purpose, or some of the pages at the end of the general ledger may be reserved for the individual subscribers accounts. If the latter plan is adopted, which we do not advise, care must be taken to omit these accounts when taking off a trial balance. The aggregate of all the balances in such subsidiary ledger (or in such reserved part of the general ledger) must always be the same as the balance of the Stock Subscription account.

If all the stock had been subscribed for there would be no occasion at present to open a Treasury Stock account, as Stock Subscription account would serve the purpose, with less book-keeping.

As each share carries with it one vote at the stockholders' meetings, it is necessary to have a record showing the voting power—number of shares—of each stockholder. The laws also require that such list be kept. For this purpose the following form of shareholders' ledger is the simplest and best known to the writer. In it all unnecessary matter is omitted. Shares are entered, but not money, so that the balance shows always the number of shares or votes; and, having that information, anyone can at once tell the amount in dollars if it should become necessary.

At stockholders' meeting, where the representation has frequently to be accurately ascertained and reported in very short time, this simple form will be found invaluable.

The transfer journal leading thereto is so simple and so plainly sug-

Stockholder's Name..... Address.....

Date	No. of Transfer	Shares		CERTIFICATES		Balance of Shares Held
		Acqird	Trans	Issued	Surrendered	

gested by the form of ledger that description is unnecessary, further than to say all transfers are entered on the transfer journal in numerical order, as they occur.

CHAPTER VI.

Capital Stock and Capital.

THE difficulty which looms up quite formidably before a book-keeper when he first undertakes to make entries relating to capital stock is largely due to the treating of the expressions "capital stock" and "capital" as synonymous terms, whereas, strictly speaking they are not so, and I have therefore thought it expedient to attempt to draw a clear distinction between the two.

Let me state at the outset that a corporation having a capital stock is called a "stock corporation" and that its component parts are called stock-

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holders; and that a corporation having no capital stock is called a "non-stock corporation," and that its component parts are called members. It is evident, therefore, that a corporation may exist without having a capital stock.

The capital stock of a corporation is the amount, in money or property, subscribed and paid in, or secured to be paid in, by the stockholders. The amount of capital stock, the number of shares into which it is divided, and the par value of each share are determined upon by the original subscribers, and embodied in the articles of association, and the amount of the capital stock so fixed remains invariably the same, unless changed by the stockholders in pursuance of legislative authority. The directors who are to manage the affairs of the corporation for the first year, or until their successors are elected, are named concurrently with the fixing of the amount of the capital stock, and it follows that they could not have had any voice in the fixing of the amount of the capital stock, nor can they subsequently, by resolution or otherwise, increase or diminish or in any wise vary the amount of the capital stock as set out in the articles of the association whereby the corporation was created. The powers of the corporation being in the board of directors, it can, however, take the initiative and call the stockholders together for the purpose of deciding whether or not the stockholders deem it desirable to have a change made in their original holdings in the corporation; the law in such case made and provided, must be closely followed, and if any change is made in the capital stock, notice to the world must be given by the filing, in the offices where the original articles of association were filed, of a certificate of such change. The capital stock of a corporation is considered as a substitute for the personal liability of the individual members of a private co-partnership, and the law implies a promise on the part of the subscriber to pay its par value when called for.

Capital stock therefore differs from capital in these particulars:

(1) That it remains invariably the same as fixed by the articles of association, unless changed by legislative authority; and (2) That the term capital stock is never properly used to indicate the value of the property of the corporation.

The capital of a corporation is the estate, whether in money or property, or both, at its actual value, owned by the corporation, and is subject to fluctuation; in other words, it is the investments of the stockholders in the corporation, together with the gains and profits realized from such investments; or, if there have been losses, then the capital is the residue, after deducting such losses from the investments.

The ownership of the capital stock is in the stockholders, but the ownership of the property is in the corporation; and all of the stockholders can sell all of their stock to other persons, but all of the stockholders, jointly or otherwise, could not transfer the corporate property. The stock need not be sold precisely at par; it may be sold above or below par, and is more frequently sold below than above. In California the right of a corporation to sell its stock at a price less than par and to receive the contract price in full payment is an established proposition.

Where the capital stock has not been paid in full, resort is had to assessments to provide funds for the corporation. Two kinds of assessment are recognized by law; one, on account of unpaid subscriptions; the other, for the purpose of raising money to pay debts. In California, the latter kind of

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assessment may be levied notwithstanding the subscription price has been actually paid in full. And the fact that certificates of stock have printed or written thereon, "Fully paid and non-assessable," does not waive the right of the corporation to make assessments. These words are construed to mean that no assessment will be levied on account of the deficiency in the subscription price; as otherwise, the courts have held, a corporation, at the very beginning of its existence, would be voluntarily depriving itself of the only means of protection afforded it in the raising of money other than by loans.

The laws of many of the states, and the by-laws made in pursuance of such state laws, provide that each director, as a qualification for office, shall hold one or more shares of the corporation, the object being that the affairs of a business corporation shall be entrusted only to those having a pecuniary interest in its welfare, and conservative corporation managers are careful to see that each director, in case he is not already a stockholder, shall have a certificate for the proper number of shares, issued to him upon the very day and date that he becomes a director. The directors named in the articles of association must be so qualified.

CHAPTER VII.

The Distribution of Dividends.

AT THE end of the fiscal year, and oftener if required, the net result of the business is ascertained in the manner used in "closing the books" of any business. It is desirable to take more than usual care in valuing both the property and the accounts receivable of a corporation, because most of the states make directors who assent to dividends which have not been actually earned, personally liable to the creditors of the corporation. Assets of a corporation which have been distributed among stockholders so as to leave an amount insufficient to pay liabilities may be pursued into the hands of the holders by creditors of the corporation. Some corporations set aside from the apparent profits of the current year a sinking fund to provide for accounts receivable, which may afterwards prove to be uncollectable either in whole or in part. When this has been done all accounts discovered to be "bad" during the current year (but which were left on the books by the last preceding "balance sheet" as good or even doubtful) are charged to the sinking fund. By this means each year's business is made to take care of its own bad debts only. All these details are strictly within the province of the board of directors, who are legally responsible for the management and the accountant only carries out its orders, and only makes entries of this kind by its direction. A balance sheet showing the gains and losses of the year's business and the net result of the same, also such trade statements as are required, giving the fullest possible information of the sources and causes of those gains and losses, should be prepared by the book-keeper and submitted to the board of directors. The board by formal resolution makes such disposition of the net gains as it thinks best. The usual course, after first providing for doubtful assets and such other sinking funds as the case

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requires, is to direct the balance of the gains to be carried to "surplus" or "rest." This account, by whatever name it is called, represents the undivided earnings of the "paid up capital." These earnings are distributed among the stockholders by the directors at such time and in such amounts as the directors, by resolution, order.

This order of distribution is called "declaring a dividend," and is generally in the discretion of the board of directors. The accumulation of a "surplus" fund is usually thought good business policy, and for certain classes of corporations is required by law. There are many very successful corporations whose "surplus fund" largely exceeds their "capital stock." Dividends must be equal upon all shares of stock of the same class and without preference. If the corporation has issued preferred stock, those shares constitute a class by themselves and are by the terms of the preference entitled as a class to dividends in preference to shares of common stock. But as between holders of stock of the same class there must be no discrimination and funds set aside for dividends upon any class of stock must be evenly divided among the holders of that class of stock according to the number of such shares each holds. Dividends are either a named sum per share or a named percentage on the "paid up capital." When the board of directors have declared a dividend, whether payable at once or at a future date, the book-keeper transfers the amount required to pay it from "surplus" to "dividend" account by an entry as follows:

Surplus		$.....
Dividend account,		$.....
For div. No..... $	per share.	

Dividends when declared or ordered become at once a debt due from the corporation to the ten owners of stock without reference to the ownership at the time the profits were actually earned or at the time the dividends were payable, if payment is deferred. The corporation is protected in paying dividends to stockholders of record on the day dividends are declared, without requiring production of the certificate of stock, but it is probable that a purchaser after the transfer books were closed and before dividend was declared, would be entitled to collect a dividend in the absence of any agreement that the sale was "ex-dividend," provided he notified the corporation of his purchase before the dividend was actually paid to the stockholder of record.

Dividends are usually paid by special dividend checks or orders on the treasurer, payable to the order of the stockholder of record. They may, however, be passed to the credit of the individual stockholders or paid in any other convenient manner. In any case the amount paid is charged to "dividend account" and credited to the source of payment. Should there be more than one class of stock, that fact is recognized in the resolution declaring the dividend by stating the amount to be paid on each class, and the book-keeper must have as many "dividend" accounts as these classes of stock upon which dividends are declared, distinguishing them by appropriate names.

Since the method of distributing or disposing of profits is the only practical difference between the books of account of a corporation and those of a natural person engaged in the same business any further discussion of such books seems superfluous.

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CHAPTER VIII.

The Sectionalization of Ledgers.

IT IS now very generally understood in the larger business corporations of the United States that it is advantageous to sectionalize the various accounts carried as much as possible. It is not, however, so generally understood in the smaller business houses, and it is for that reason we desire to call our readers attention to this very useful method.

Let us take, for instance, a business in which a number of traveling salesmen are employed, each having certain territory. In this case the sales ledgers should be subdivided, so many pages being allotted to the customers of each salesman. Separate columns should be provided in sales book, cash book and cross-entry journal for each section, and a representative, or adjustment account opened with each section in the general ledger to which the totals of columns in sales book, cross entry journal, and cash book are posted at the close of each month. If practicable, it will be found more convenient to provide a separate ledger for the section covered by each traveler, and the loose leaf system is admirably adapted for this purpose, as it can be made just the size to suit the number of accounts to be carried, and enlarged and diminished at will.

The form of ledger we recommend (where exceptional circumstances do not alter cases) would contain the following columns:

Date.	Items.	Fol.	D'bts.	Mo.	D'bts.	D'bt.	Bal.
Date.	Items.	Fol.	C'dts.	Mo.	C'dts.	C'dt.	Bal.

The purpose of the "Monthly Debits" and "Debit Balance" columns will be explained a little later on.

The representative, or adjustment, accounts in the general ledger will at the close of each month show as follows:

J. F. ROBINS' LEDGER ACCOUNT.

1900.	Folio.	Debits.	Mo. Debits.	Dr. Balance.
March 31.				7,846 19
April 30—				
Journal	28	6,751 20		
Cash	160	129 60	6,880 80	
				7,631 24

1900.	Folio.	Credits.	Mo. Credits.
April 30—			
Cash	160	5,967 80	
Journal	28	1,127 95	7,095 75

The credits are carried underneath the debits here for convenience of printing.

This account, you will note, displays the total business of J. F. Robins, salesman, and its result, and it can be made still more useful by a little more itemizing. Sales can be kept separate from cross entries on the debit side, and on the credit side returns and allowances may be particularized. The increase of "Monthly Debits" shows an increase of business, and the increasing or decreasing "Debit Balance" shows how the customers are paying their accounts. So that this account becomes a valuable comparative statement of J. F. Robins' business.

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In taking the trial balance of the J. F. Robins ledger, draw off monthly debits, monthly credits and the balances, and foot all three columns. Then, if the total of the individual balances does not amount to $7,631.24, you can see at a glance whether your total debits posted are $6,880.20, and your total credits $7,095.75. That means that ninety-nine times out of a hundred when there is an error it can be located to the side on which it occurred, which is a tremendous advantage.

The principle above outlined can be successfully carried out in any business with manifest benefit. In enterprises of considerable magnitude it will frequently be found convenient to have separate cash books, sales books, etc., as the use of columnar books in such cases will necessitate books of an unwieldly size.

The accounts may be sectionalized in many ways as may be found most suitable to the requirements of the business. Some houses sectionalize territorially, as: New York ledger, Pennsylvania ledger, Ohio ledger, etc., etc. Some sectionalize alphabetically, as A-F ledger, G-K ledger, L-R ledger, S-Z ledger.

A very frequent sectionalization is by departments, as Wholesale Ledger, City; Wholesale Ledger, Foreign; Retail Ledger, etc., etc.

Where sales tickets are used it will be found useful to have different colored tickets for each section.

Where there are a number of sections it is also found useful to carry the separate adjustment accounts in the general ledger, and group them in the private ledger for the benefit of the principal, or officers of the company, thus:

	Folio.	Debits.	Mo. Debits.	Dr. Balance.
Mar. 31. Balances—				
N. Y. ledger.....				9,562 75
Pa ledger				2,758 92
Ohio ledger				6,875 60
April 30. Journal—				
N. Y. ledger.....	178	10,785 90		
Pa. ledger	178	4,560 25		
Ohio ledger	180	8,972 60		
Cash—				
N. Y. ledger.....	235	475 35		
Pa. ledger	235			
Ohio ledger	235	96 50	24,890 60	
Balances—				
N. Y. ledger.....				10,940 11
Pa. ledger				4,446 62
Ohio ledger				7,716 25

1900.	Folio.	Credits.	Mo. Credits.
April 30. Cash—			
N. Y. ledger.....	234	8,765 1[illegible]	
Pa. ledger	234	2,219 75	
Ohio ledger	234	7,550 20	
Journal—			
N. Y. ledger.....	178	1,118 75	
Pa. ledger	178	652 80	
Ohio ledger	180	678 25	20,984 89

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CHAPTER IX.

The Transfer of Accounts from Partnerships to Corporations.

MANY book-keepers who are otherwise entirely competent appear to be afraid to take charge of the detail pertaining to the transfer of accounts from a partnership to a corporation. We are not referring now to large interests, or trusts whose stock is open to public subscription. We have in view merely a small commercial concern, rated in Dun's at $100,000, the two proprietors of which wish to introduce additional capital in order to extend their business.

There is no question of stock ledgers, or subscription ledgers, preferred and common stock, debentures or bonds, or anything of that kind.

As an example we will take the incorporation of the firm of Schneider & Schroeder, who have arranged with Mr. Schuettler that he should invest $35,000 in the business, taking an active interest with the position of vice-president.

The balance sheet of Schneider & Schroeder on December 31, 1898, was as follows:

Cash		$ 1,866 50
Bills Receivable		10,783 12
Accounts Receivable		25,638 46
Inventory		20,720 42
Real Estate		5,881 93
		$64,890 43
A. Schneider, investment	$28,120 50	
B. Schroeder, investment	17,119 33	
Bills Payable, investment	8,500 00	
Accounts Payable	11,150 60	
	$64,890 43	

The net assets of the partnership were therefore $45,239.83. The new company was organized with a capital of $75,000, the stock to be subscribed as follows: A. Schneider, $25,000; B. Schroeder, $15,000; C. Schuettler, $35,000. The company was incorporated under the name of "The Schneider & Schroeder Co."

A new set of account books was purchased for the new company and the first entry made was as follows in the journal:

Subscription Acct	$75,000 00	
To Capital Acct		$75,000 00

This entry records the fact that the company was incorporated with a certain capital, and that the stock is waiting to be subscribed.

It was preceded by the following explanation:

"The Schneider & Schroeder Co. Incorporated under the laws of the State of ————, 1st January, 1899. Authorized capital, $75,000, 750 shares, par value $100 each."

Messrs. Schneider, Schroeder and Schuettler having subscribed for 250, 150 and 350 shares respectfully, the following entries were made in the journal:

B. Schroeder, Dr., 150 shares @ $100 00 each	15,000 00	
A. Schneider, Dr., 250 shares @ $100.00 each	$25,000 00	
C. Schuettler, Dr., 350 shares @ $100 00 each	35,000 00	
To subscription account, cr		35,000 00

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The stock having all been subscribed the subscription account is closed and the subscribers are charged with the value of the stock for which they have subscribed.

At a meeting of the board of directors of the new company it was resolved to purchase the business of Schneider & Schroeder at the par value of its net assets. A bill of sale is accordingly drawn and the following entries made in the journal as a record of the purchase:

"To transfer of the business of Schneider & Schroeder (consisting of sundry assets and liabilities as hereunder shown) by bill of sale dated 1st January, 1899, duly executed and acknowledged, and pursuant to a resolution of the board of directors at a meeting held on the first day of January, 1899, and entered on the minutes, pages 2 and 3.

Cash	$ 1,866 50	
Bills Receivable	10,783 12	
Accounts Receivable	25,638 46	
Inventory	20,720 42	
Real Estate	5,881 93	
To Bills Payable		$ 8,500 00
Accounts Payable		11,150 60
Schneider & Schroeder		45,239 83

In the meantime Mr. Schuettler has paid by check for his stock, the receipt of which is duly recorded in the cash book. It is not necessary to pass checks between the old business and the new, as the following journal entries will fully answer the purpose:

Schneider & Schroeder	$45,239 83	
To A. Schneider, stock acct.		$25,000 00
B. Schroeder, stock acct.		15,000 00
A. Schneider, personal acct.		3,120 50
B. Schroeder, personal acct.		2,119 33

To pay for stock subscribed by A. Schneider and B. Schroeder in The Schneider & Schroeder Co., and to transfer the balance of the credit to Schneider & Schroeder to their respective personal accounts as authorized this day by the said A. Schneider and B. Schroeder.

The balance sheet of the new company will now show as follows:

ASSETS.

Cash	$36,866 50
Bills Receivable	10,783 12
Accounts Receivable	25,638 46
Inventory	20,720 42
Real Estate	5,881 93
	$99,890 43

LIABILITIES.

Capital	$75,000 00
Bills Payable	8,500 00
Accounts Payable	11,150 60
A. Schneider, personal	3,120 50
B. Schroeder, personal	2,119 33
	$99,890 43

The closing of the books of the old company is a very simple matter. First, credit asset accounts with amounts of balances of such accounts, $64,890.43. Debit trade liability accounts with amounts of balances of such accounts, $19,650.60. Debit Schneider & Schroeder with the difference

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between the assets and liabilities, with an explanation that this is the purchase price of the business transferred, $45,239.83. The only accounts left on the old ledger are the debit account of The Schneider & Schroeder Co. and the credit accounts of A. Schneider and B. Schroeder, so, second, close these accounts by crediting The Schneider & Schroeder Co. $45,239.83 and charging A. Schneider $28,120.50 and B. Schroeder $17,119.33 to stock certificates received from The Schneider & Schroeder Co., $40,000 in part payment of purchase money and cash $5,239.83 to balance.

CHAPTER X.

Transfer of Accounts from Partnerships to Corporations—No. 2.

A JOINT stock company, in the definition of the Century dictionary, is declared to be "an association, the property or capital of which is represented by stock issued in shares to the members respectively; the object being that changes in membership shall depend, not as in partnership, upon the consent of all the members, but upon the transfer of shares, which (when fully paid up) any member may make without the consent of the others, and also that the death of a member shall not dissolve the association, as in case of a partnership, his right being simply transferred to his executors or administrators." Then follows a further statement to the effect that "in the absence of any statute, the liability of a joint stock company and its members, and its means of enforcing its rights as to third parties, are nevertheless precisely those of partners; all the members must join in suing; all are liable for its debts, and all must be joined when sued."

The latter portion of this definition may be correct as to joint stock companies in the United States. In Canada, however, and especially in Ontario, it is entirely erroneous. With us a company is, in a legal point of view, distinct from the persons composing it; and these persons are not personally responsible for the company's debts or engagements, unless expressly made so, and their property is affected only to the extent of their interest in the company. The owner of shares upon which all has not been called in, or if called is still unpaid, is responsible to the creditors of the company for the amount of his stock so remaining unpaid.

In the case which has just passed through my hands, the company was formed for the purpose of taking over the assets of a partnership. I use fictitious names and amounts. I have treated the conversion in a method somewhat different from anything I have seen stated in the works on accounting; and to my mind in a simpler way. The letters patent of the company gave an authorized capital of $200,000. Seven provisional directors were named with power to go on and organize and carry on the business of the company. It having been decided as of advantage to have a certain amount of preferred stock, with certain privileges attached, the first operation of the directors was the creation thereof. The statute provides that where preference stock is created, it shall be done by by-law of the directors, which shall then be unanimously sanctioned by all the holders of shares—both common

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and preferred stock subscribers—at a special general meeting called for the purpose. Or, if the sanction of all the shareholders is obtained in writing to the by-law passed by the directors, the necessity of a special general meeting is obviated. The latter course was with us the easier, and was the one pursued. The preferred stock carries with it the privilege of a fixed, cumulative dividend of 6 per cent, which, in plain Anglo-Saxon, means that dividend of 6 per cent shall be paid annually upon the preferred stock out of the net earnings of the company, before any dividend can be declared upon the common stock, and if in any year there is insufficient profits to pay the 6 per cent, then the amount required to make up the deficiency shall be a first charge upon the net earnings of the following year's business. When the full amount of the dividend on the preferred stock has been provided for annually, then any balance of net earnings will be applied toward the payment of a dividend on the common stock up to 6 per cent. Should there still remain any undivided profits, it can either be divided pro rata over both the preferred and common stock, or be placed to the credit of a reserve account out of which future dividends may be paid. In the formation of the larger corporation or trusts, those "judicious combinations of capital" of which we hear so much, provision is generally made that before dividends are paid to the common stockholders, a certain amount shall be annually paid into a reserve account, which will stand as a guarantee that the holders of preferred stock will receive their stated dividends as regularly as the years roll by. This precaution is generally taken by the controlling interest—usually the preferred stockholders—who care very little for the poor common stockholders. In the case I am discussing, with one or two exceptions, the preferred and common stockholders are identical, so that the interests of the one class are the interests of the other.

The opening in the journal of the new company for the preferred stock is as follows:

Sundries, Dr.:		
Capital stock, preferred		$40,000 00
Thos. Jones, 50 shares	$ 5,000 00	
David Harum, 100 shares	10,000 00	
Richard Carvel, 40 shares	4,000 00	
R. L. Stevenson, 50 shares	5,000 00	
E. H. Beach, 160 shares	16,000 00	

It will be observed that no attention has been paid to the fact that the authorized preferred capital stock is $100,000. In the majority of works on accounting, especially American, the entry would be something like this:

Subscription	$40,000 00	
Treasury stock (preferred)	60,000 00	
Capital stock (preferred)		$100,000 00

To my mind an entry in the books showing the amount of the authorized capital is totally unnecessary, besides being misleading to the public having business with the company. The unsubscribed or treasury stock, as it is called, has no value whatever as an asset of the company. It is not an asset in any sense of the word. Its only value is one of availability for subscription in case it be found necessary to interest an increased capital in the business. Placing an account with such a high sounding title upon the books and in the annual statements of a company, can only have the effect of deceiving the unsophisticated and those not familiar with accounts, and serves no useful

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purpose whatever. The subscribed, or paid-up capital of the company is all that the public wishes to know anything of, and no entry should be made in the books which would in the slightest degree becloud the real facts. One authority suggests "that the charter or act that brings into being the corporation also creates value, or a latent value, in the shares of stock authorized by the company." The latent value of a million dollars worth of unsubscribed stock will not pay one dollar of the liabilities, unless a purchaser of that stock can be found, and to say "that the principles of accounts and the logic of ethics both permit the debiting of treasury stock to represent unsubscribed stock," is beating his Satanic majesty around the bush in a manner for which I should not care to assume the responsibility. The only kind of stock that can be truthfully termed "treasury stock" is where stockholders return a certain number of shares of the company (which they have already paid for either in cash or by transfer of property) into its treasury to be sold again, for the purpose of providing a working capital.

The next entry in the journal is:

Sundries, Dr.:		
Capital stock, common		$30,000 00
Thos. Jones, 30 shares	$ 2,250 00	
David Harum, 133 1-3 shares	10,000 00	
Richard Carvel, 13 1-3 shares	1,000 00	
R. L. Stevenson, 26 2-3 shares	2,000 00	
Robt. Thomson, 66 2-3 shares	5,000 00	
Adam Hope, 30 shares	7,500 00	
Discount upon shares issued	7,500 00	

In the case of the common stock, it was decided that of the authorized issue, $30,000 should be offered to the preferred stockholders at $75 per share, the nature of the business being such that although dividends would be earned, none will likely be paid to the common stockholders for the first two or three years. And here comes in another of those anachronisms in accountancy literature. In a well-known text book a discount on stock is treated in such a way that the following would be the entry:

Subscription	$22,500 00	
Working capital	7,500 00	
Capital stock, common (or treasury stock)		$30,000 00

Why the discount on shares is debited to "Working Capital" is beyond my apprehension. The author says that many book-keepers "feel justified in debiting Loss and Gain account instead of 'Working Capital,' " and points out that the company does not practically, or otherwise, lose anything by the transaction, and therefore that it is not properly a charge to Loss and Gain. In this he is right. But why debit Working Capital? It is not an accretion to capital or assets of any sort. On the contrary, it really represents a loss, to the extent that the capital actually invested must earn a dividend not only for itself but as well for the $7,500 of rebate made on the stock. It sounds better, I presume, and really this is the only excuse or justification that it seems to me can be offered for debiting "Working Capital" rather than "Discount on Shares Issued" or "Rebate on Shares Account." For my own part, I prefer to call a spade a spade. As a matter of fact, according to the statutes of Ontario there is some question as to whether stock (except mining companies) can be sold at a discount, and in case of forced liquidation, it is possible that holders of stock bought at a discount might be successfully

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placed upon the list of contributories in a winding up proceeding, to the extent of the amount of discount so allowed.

Capital account having been credited with subscriptions, and the persons subscribing having been debited, we now proceed to a consideration of the transfer of the assets of the business. An inventory of the real estate, plant and merchandise having been taken under the supervision of a committee of the directors of the new company, and an arrangement arrived at as to the amount of stock to be taken by the respective partners, the question of the liabilities of the partnership was next to be dealt with. Here, too, I recommended a departure from the ordinary mode of procedure. Instead of the company assuming any of the liabilities of the partnership, I arranged that the amount which was to be paid for the assets, less the stock which was to be taken by the partners, should be paid to a trustee, who should be authorized and empowered to pay off the partnership indebtedness according to a list to be furnished him by the partners. This proceeding materially simplified the book-keeping connected with the transfer, and the only entry required to get the assets on the books of the company was:

Real estate	$10,000 00	
Plant account	9,700 00	
Mdse. account	35,720 00	
J. H. Brown & Co		$55,420 00

Of the amount of credit of J. H. B. & Co., $30,420 was to be paid over to the trustee, and this was accomplished by an entry:

J. H. Brown & Co	$30,420 00	
Henry Jones, trustee		$30,400 00
For transfer of account to cover liabilities of J. H. Brown & Co.		

Of the above $30,420 one creditor agreed to take preferred stock for his account of $5,000, hence the ensuing two entries:

Geo. Johnson	$5,000 00	
Capital stock (preferred)		$5,000 00
For 50 shares of preferred stock.		
Henry Jones, trustee	$5,000 00	
George Johnson		$5,000 00
For preferred stock taken in exchange for notes held against partnership.		

To close the account of the partnership by exchange of stock for the equity of the partners in the assets of the partnership, this entry was necessary:

J H. Brown & Co		$25,000 00
J H. Brown	$10,000 00	
E. B. Ward	7,500 00	
T. Burns	7,500 00	
Capital stock (common)		$25,000 00

As payments were received on account of stock, cash was debited, while payments to the trustee were credits to Cash.

The book debts of the partnership were divided by mutual consent amongst the partners.

Thus, very simply and expeditiously, was the conversion of the partnership to a joint stock company effected.

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CHAPTER XI.

The Treatment of Discount on Treasury Stock.

THE following point recently occurred in practice: A, B, C, D and E formed a corporation for the purpose of manufacturing and selling a patented article. The capital stock is $100,000, being 1,000 shares at $100 per share. The incorporators contribute $2,000 each in cash, and A receives for his patent right nine hundred shares at par, "full paid and non-assessable." As part of the contract, A transfers to the company three hundred shares to be held as treasury stock and to be sold at not less than fifty dollars per share. Subsequently the company sells one hundred shares of Treasury Stock at the limited price, namely, fifty dollars per share. The entry "discount on treasury stock" would be at variance with the shares being "full paid and non-assessable." It is also desired to avoid this item, "discount on treasury stock," appearing in the balance sheet. The following entries are suggested to meet the difficulty:

Cash	$10,000 00	
Patent right	90,000 00	
To capital stock		$100,000 00
Treasury stock	15,000 00	
To patent right		15,000 00
Cash	5,000 00	
To treasury stock		5,000 00

The resulting balance sheet shows as follows:

Assets:		
Patent right	$75,000 00	
Treasury stock	10,000 00	
Cash	15,000 00	
Liabilities:		
Capital stock		$100,000 00

The main point is that the treasury stock is entered and carried on the books at its proper value of fifty dollars per share, instead of its nominal value of one hundred dollars per share.

CHAPTER XII.

Sales of Stock at Discount for Working Capital.

REFERRING to the practice, so common amongst mining companies, of selling shares of the par value of $1 at ten cents or fifteen cents per share—a discount of 85 or 90 per cent, there can be no question but that it is perfectly legitimate, although considerable doubt exists as to whether shares in any other form of company can be disposed of by the direcors at a discount. Or, rather, that n cases where such sales are made, if the holders of

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such shares are not responsible to the creditors of the company to the extent of the discount so allowed, should stress of circumstances make such a recourse necessary.

No question arises as to how the discount on shares is treated by the originators of a mining company.

The usual course is to value the mining property at the par value of the capital stock, be it $5,000 or $5,000,000. The capital stock having been divided among the promoters according to their interests, the first entry which finds its way into the books of the mining company will read:

The Golconda Mine	$5,000,000 00	
Capital stock		$5,000,000 00

The above will be posted to the general ledger, while the stock ledger will contain details as to the holdings of stock by the promoters.

Cash being required now to develop the property, the usual course is to make a return to the treasury of a sufficient amount of stock to be sold to the public to provide the necessary working capital.

Let us suppose, for purposes of illustration, that $500,000 of the holdings of the promoters is returned by them to the treasury. Then:

Treasury stock	$500,000 00	
Working capital		$500,000 00

So far so good. Of course the disposal of the stock at par value is out of the question, and it is placed upon the market at, say, 10 cents per share, realizing in cash $50,000.

The entry which covers the transaction usually runs as follows:

Cash	$ 50,000 00	
Working capital	450,000 00	
Treasury stock		$500,000 00

In this case stock is presented to the company of an alleged value of $500,000, and it is perfectly legitimate and proper when, at the disposal of the stock, it is found that it has been overvalued, that the loss arising from the sale should be charged back to the account in which it originated. The question of the discount on shares issued is, in the case of mining companies organized upon this plan, thus easily disposed of.

Let us now take the case of a company formed for the purpose of purchasing a mining property. The property can be purchased for $45,000 cash. The capital stock (authorized) of the company is placed at $1,000,000, in shares of $1 each.

Of these the promoters take 450,000 shares at 10 cents each, thus realizing the $45,000 needed to purchase the property.

How is this to be got upon the books of the company? In the natural order of things the entry would be:

Cash	$ 45,000 00	
Discount on shares	405,000 00	
Capital stock, subscribed		$450,000 00

The directors decide now to sell 200,000 of the $1 shares at 25 cents on the dollar to provide a working capital of $50,000. They succeed in doing this, and then would follow the entry:

Cash	$ 50,000 00	
Discount on shares	150,000 00	
Capital stock, subscribed		$200,000 00

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The balance of 350,000 shares is left unsubscribed, or, as the literary accountants delight to call it, as "treasury stock."

By the above treatment of the subscribed capital stock you have a plain, unvarnished statement upon the books as to the position of the company in respect to its capital.

An account in the ledger must necessarily be opened for the "Discount on Shares," and the query is as to how this shall appear in the balance sheet of the company.

To my mind, there are several ways of treating it. The object of showing the amount of subscribed capital stock in the balance sheet is to furnish information as to the value upon which dividends are being paid. The fact

Assets			Liabilities		
Mines Account	$45000	00	Bills Payable	$ 5000	00
Machinery	15000	00	Ledger Balances	5000	00
Ores in dump	10000	00	Balance	100000	00
Cash on hand	40000	00		110000	00
	110000	00	Capital Account	650000	00
Balance	100000	00	Surplus	5000	00
Discount on Shares %	555000	00		655000	00
	655000	00			

that there is an account upon the books of the company known as "Discount on Shares" does not affect the company's credit adversely, while to carry the account under the heading "Working Capital" would be to deceive the creditors of the company. How is the average individual who studies the balance sheet of the company, finding thereon on the asset side an entry—

Working capital $555,000 00

to know that such is not an asset at all, but merely a fictitious account intended to give the company an appearance of substantiality which it lacks entirely—although, as a fact, the concern may be perfectly solvent and healthy?

I think the preferable way to dispose of the item is to call it what it really is in the balance sheet, but to make a subdivision of the statement as between the capital and trade assets on the one side and the asset known as "Working Capital (discount on shares)"; and on the liability side a similar division as between trade liabilities and the liability on capital account.

Another way of treating it, keeping it in the usual "report" form of balance sheet, would be:

Assets—		
Mines account	$45,000 00	
Machinery account	15,000 00	
Ores in dump.....	10,000 00	
Cash on hand.....	40,000 00	
		$110,000 00
Liabilities—		
Bills payable	$ 5,000 00	
Ledger balances	5,000 00	
Capital $650,000 00		
Less discount 555,000 00		
	95,000 00	
	$105,000 00	
Surplus	5,000 00	
		$110,000 00

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CHAPTER XIII.

The Treatment of Bonus Account.

IN THE organization of a corporation it is often the case that the original incorators desire to pay for their stock otherwise than in cash money. In order to meet the difficulties presented by this situation such accounts as goodwill, bonus, franchise, etc., are opened on the ledger and represent what the company has received for its shares of capital stock in the way of considerations other than money or tangible assets. Let us consider some special cases. A company is organized with a capital of $50,000, and the promoter is to receive for his services fifty shares of the capital stock at a par value of $100 per share. The usual entry is Bonus to Capital Stock or Bonus to Treasury Stock, $5,000. Bonus is thus carried as an asset on the books of the company, whereas, as a matter of fact, Bonus is an expense account pure and simple. In the organization of the company the services of the promoter are just as necessary and legitimate as the services of an attorney or an accountant. For such services the company may pay in one or four ways. It may pay in cash, or it may give the promoter credit on open account, or it may give its promissory note, or it may give a certain number of shares of its capital stock. The first three methods of providing for a claim are familiar and need no special discussion. The fourth method, which is the one usually adopted, seems to present some difficulty. The first point to be made clear is that this is a perfectly legitimate mode of paying the promoter for his services rendered. It is true that this method may be abused. The promoter may receive a great many more shares than he is entitled to. But so may any other method of payment be abused. The payment by way of shares in the company stock is the most equitable in that the value of the payment is dependent upon the future success of the company. If the company succeeds the promoter may, if he chooses, sell out his shares and thus turn his stock payment into cash money. For the company the stock payment is the more advantageous in that it does not require the outlay of cash money and is practically a lien only on possible profits. From the point of view of the accountant the difficulty is to make a proper disposition of the "Bonus" account. The entry "Bonus dr. to Treasury Stock" is simply a short way of telling a long story. An accountant understands at once from the entry and from the brief explanation in the journal exactly what has been done, but it is not always so plain to the general public. It is said that "Bonus" appears as an asset of the company when, in reality, it is not an asset at all. It is more correct to say that as against the creditors of the company it is not an asset and is not intended to be stated as such, but as against the stockholders of the company it is an asset. In settling with its stockholders the company may use the Bonus account as an asset to offset its liability on account of the capital stock, or to offset its liability on account of any undivided profits. If there are no undivided profits, then the capital stock is impaired to the extent of the Bonus account. If there are undivided profits exactly equal to the Bonus account then in settling with the stockholders the company will offset its liability on account of capital stock by the amount of the Bonus account.

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As a matter of accounting, herefore, a certain amount of the profits should be reserved each year to equal the amount of the Bonus account. When the reserved profits equal the Bonus account, the one may be used to offset the other and the Bonus account taken off the books.

CHAPTER XIV.

Some Useful Definitions.

PERSONAL ACCOUNT.—An account which records the transactions of a business with its customers, creditors, or debtors. An individual account. Such an account comprises all charges or debits, and all credits of whatsoever nature, the excess of debits over credits, or of credits over debits, showing the balance of account.

An account representing indebtedness of or liability to a person.

An account containing charges on which no profits are made, such as personal accounts for salaries, dividends, traveling salesmen, etc., as distinguished from accounts with customers or creditors.

* * *

IMPERSONAL ACCOUNT.—An account which represents conditions, and records the profits, losses, receipts or expenditures of a business, but does not represent persons.

Examples: General expense, manufacturing expense, freight, discount, interest, repairs, advertising, postage.

* * *

CURRENT ACCOUNT.—An active, or running account. An account wherein all transactions are itemized.

* * *

SUMMARY ACCOUNT.—An account dealing with totals and not with items. As the use of columnar cash books, journals, and auxiliary record books increases, the number of summary accounts tends to outnumber itemized impersonal accounts.

Balance, or adjustment accounts, are good types of the summary account.

REPRESENTATIVE ACCOUNT.—An account—preferably—whose function it is to complete the double entry by representing the transactions described or recorded by personal accounts.

Thus sales account furnishes the double entry for the customers' accounts, and purchase account that for the creditors' accounts.

Also called "nominal account."

* * *

ADJUSTMENT ACCOUNT.—A summary account devised to render personal ledgers self-balancing, so that errors may be localized and a great saving of labor effected in tracing them.

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The principle involved is to make a contra posting for every item posted to the ledger to be balanced, but to make such contra postings in totals and not in detail.

This necessitates separate books of original entry for each ledger, or separate columns, the latter being the plan more generally used.

* * *

NEGATIVE ACCOUNT.—An account which reduces the value of some other account. Thus treasury stock is a negative account to capital; returns is a negative to sales.

* * *

COMPARATIVE FINANCIAL STATEMENT.—A comparative financial statement exhibits totals of purchases, manufacturing expense, general expense, output, sales, etc., at stated successive periods, thereby securing a comparison of cost of production, gross profit, and selling expenses on amount of turnover, and facilitating the detection of excessive charges for labor, or decrease of efficiency in other departments of the business.

* * *

FIXED ASSETS.—Fixed assets are those which form a permanent and essential part of the business carried on, such as real estate, machinery, land and plant of a mine, roadbed and rolling stock of a railroad, etc. They are subject to appreciation and depreciation.

* * *

FLOATING ASSETS.—Floating assets are those which vary from day to day from sale, realization, or exchange, etc., such as stock-in-trade, cash, accounts and notes receivable, land of a real estate company, etc.

* * *

SPECULATIVE ASSETS.—Speculative assets are those which fluctuate in value from day to day—such as stocks, bonds, and "futures" in different kinds of products dealt in by the Exchanges.

Such assets as patent rights, goodwill and advertising devices are more or less speculative, the latter often losing its entire value the moment a business is suspended or closed out.

* * *

BALANCE SHEET.—A statement of actual assets and liabilities at a given date designed to exhibit the financial condition of a business. It consists of the balances of assets and liabilities accounts extracted from the ledger after inventory has been taken and the nominal accounts have been closed into profit and loss, and of outstanding resources or liabilities not included in the books of account.

The excess of assets over liabilities represents the profit made by the operations of the business during the period covered by the statement; the excess of liabilities over assets represents a loss. This surplus, or deficiency, is the balance of the balance sheet, and must agree with the balance of the current profit and loss account.

Items such as "surplus," "reserve," "undivided profit," etc., having separate accounts in the ledger, are in reality sections of the balance sheet, and should be classified accordingly.

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The components of a balance sheet are, in our opinion, best classified as follows:

Assets—Cash and property, personal, speculative.

Liabilities—Negatives to property, personal, proportion of wages, taxes, etc., capital, reserve, profit and loss.

* * *

TREASURY STOCK.—Capital stock unsubscribed, or of which a corporation has acquired possession from its original owners. Stock set aside for sale in order to raise working capital.

* * *

RESERVE FUND.—An amount set aside out of profits to provide against unforeseen contingencies.

A sum set aside to provide for depreciation of specified assets is considered a charge against assets, and as such, should be deducted on the balance sheet from the amount of the assets involved.

* * *

SINKING FUND.—An amount set aside to provide against anticipated losses on redemption of debentures, expiration of leases, etc., and specially invested. While, therefore, a reserve fund appears among the liabilities and is simply a portion of the surplus of assets over liabilities, a sinking fund as an investment is an asset and is so shown on the balance sheet.

The sums so set aside and invested should be sufficient, with interest, to amount to the total outlay the sinking fund is designed to cover.

* * *

SUSPENSE ACCOUNT.—A summary account to which are transferred the balances of doubtful accounts from the customers' ledger, and in which account they are retained until such time as they can be definitely disposed of. In this way they are not lost sight of, and can be estimated in the balance sheet at their proper value.

COMMON STOCK.—The ordinary stock of a corporation on which dividends are paid from the surplus earned.

* * *

PREFERRED STOCK.—A special stock issued on which a specified dividend is guaranteed and which dividends must be paid prior to the holders of common stock receiving any distribution from the profits of an enterprise. Where a business is very prosperous common stock may be a much more valuable investment than preferred stock, as it may receive larger dividends according to the increase of profits available for distribution, whereas, preferred stock can never receive more than the specified percentage.

* * *

CUMULATIVE PREFERRED STOCK.—Preferred stock which is entitled to all arrears of unpaid dividends prior to any distribution of profits among the common stockholders.

* * *

NON-CUMULATIVE PREFERRED STOCK.—Stock the holders of which lose any unpaid guaranteed dividends which the earnings of a company were insufficient to pay at date of payment.

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DEFERRED STOCK.—It sometimes happens that some portion of stock is issued on the understanding that it shall receive nothing from the profits of a business until after the common stock holders have been paid a dividend of a certain amount, after which deferred stock shall participate.

* * *

FULLY PAID NON-ASSESSABLE STOCK.—Stock the face value of which has been paid by the holders on the agreement that it shall not be assessed by the officers of the company for any purpose.

* * *

WATERED STOCK.—When a corporation desires to evade its State or Municipal tax or other obligations by reducing its showing of profits, it reorganizes with an increased capital stock, arbitrarily increasing the values of its assets to correspond. By this means the percentage of profits on capital invested is apparently reduced and the stock is "watered."

* * *

FUNDED DEBT.—A liability or liabilities secured by bonds. Unlike debenture bonds these bonds are themselves secured by mortgages or equally substantial security.

* * *

WORKING CAPITAL is the amount available to provide the necessary expenditures for running the business. This amount may consist of:

a. Capital stock subscribed and paid.
b. Capital stock sold by stockholders to raise cash.
c. Dividends or surplus undistributed.
d. Part of purchase money of business allowed to remain unpaid.
e. Loans from banks or otherwise.
f. Proceeds of accommodation notes.
g. Assessment on stockholders.

Etc., etc.

* * *

DEBENTURES are unsecured bonds issued for sale for the purpose of securing working capital, and interest on same is a first charge on profits—that is, in priority to preferred or other dividends.

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PART VI.

Accounting for the Wholesale Grocery and Hardware Businesses.

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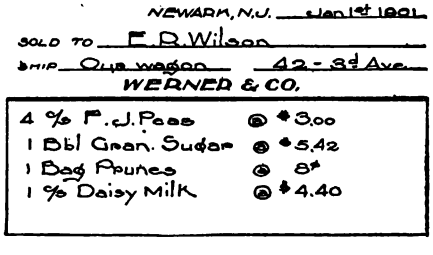
ACCOUNTING SYSTEMS

FOR THE

Wholesale Grocery and Hardware Businesses.

The system given below is designed for a house with a business of a million a year. I have made it for a large business, because I think it is an easy matter to fit a plan which covers the operations of a large concern to the needs of a smaller one. For instance, if the business only required one debit or sales ledger, the posting would be made direct from the sales book. There would be no journalizing of sales at all. The reason for journalizing is that in this business there are four ledgers, it is necessary, in order to be able to balance separately. We will begin with the original


NEWARK, N.J. Jan 1st 1891

SOLD TO F. R. Wilson

SHIP Our wagon 42 - 3d Ave.

WERNER & CO.

4 ⅌ F. J. Peas	@ $3.00
1 Bbl Gran. Sugar	@ $5.42
1 Bag Prunes	@ 8¢
1 ⅌ Daisy Milk	@ $4.40

order or sales ticket, as it is also called. (See Fig. 1.) This is a ticket which is made out by the salesman taking the order. It goes direct to the credit man, who, if the customer is good for it, "passes" it by putting his initial or private mark on it.

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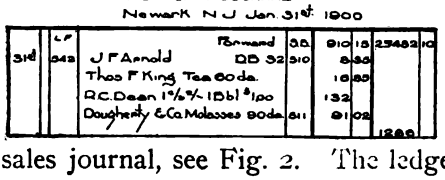
From the credit man the ticket goes to the head salesman. He checks the prices and sends it to the bill office. This office is divided into two departments—city and country. Each department takes their orders and copies them on to loose sheets of the sales book. These sheets have the common journal ruling and are perforated so that they can be fastened temporarily with a McGill fastener. In charging, two men work together. In the city department, one calls off and charges at the same time and the other takes the dictation and makes the invoice. They figure separately and prove before taking up the next charge. The invoices are handed to the shipper. He orders the goods called for and checks off each article as it is placed on the wagon and gives the driver the invoice. Every customer receiving goods by wagon must insist upon an invoice for the same. One of the largest houses in the country follows out this plan and has never had a dispute with a customer about not receiving goods. When the customer accepts an invoice from the driver it is understood that he received the goods the invoice called for. In the country department one charges and calls off and the other makes the railroad receipts. The freight receipts are made in duplicate by the use of a carbon sheet. These receipts are handed to the country shipper and checked on the wagon in the same manner as the city deliveries. The country bills are made out in spare moments or the next day on the typewriter in the main office. If the business is very large, by using loose sheets three, four, or as many teams as are necessary, can work at one time. At the end of the day these sheets are fastened together and sent to the main office. The next morning they are figured and in a general way the prices checked. The sheets are then paged, taking up the last number of the day before, and so on every day up to 1,000. When 1,000 is reached these sheets are bound into a book and numbered 1, 2, 3 and so on up to 100, when they start at 1 again.

The Sales Journals.—Each ledger has a journal of its own. We are supposing that the business requires four ledgers—A to K City, L to Z City, A to K Country, and L to Z Country. At the beginning of each month in the sales journal two or more pages are left for journal items, cross entries


ATOM CITY JOURNAL
Newark N J Jan 31st 1900

	L F							
			Forward	55	910	15	25482	10
31st	242	J F Arnold	DD 32	310	8	80		
		Theo F King Tea 60 lbs.			18	85		
		R C Dean 1¼% 1 Bbl $100			132			
		Dougherty & Co Molasses 90 lbs.		611	91	02		
							1288	

etc. For ruling of sales journal, see Fig. 2. The ledgers men have assistants whose duty it is to take the sales book and write up the charges for their ledger. (See illustration of sales journal.) All packages that are returnable and such memo. as time on certain goods are posted into the ledger. The sales book is then "called" back and the journals checked.

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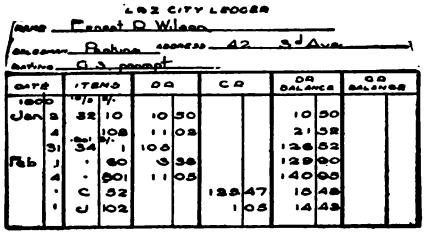
The four journals are footed and must agree with the footing of the sales book. At the end of the month the totals of the several journals are credited to sales merchandise in the general ledger.

Credit Journals.—Each ledger has also a credit journal of its own, and is ruled in common journal ruling, with the addition of a line to keep the checks (') regular. All credits for discounts, merchandise returned, charged packages returned, etc., are put through this book. The returns are copied from the receiving clerk's book of returned merchandise. The totals of these journals are debited to sales merchandise at the end of the month. At the beginning of each month two pages are reserved—one for interest account and the other for bills receivable. The headings of these pages read "Sundries Dr. to Interest" and "Bills Receivable Dr. to Sundries." This does away with making a journal entry every time there is an item for these accounts. The totals of these two pages are posted to their respective accounts in the general ledger. The bills receivable items can be posted separately if desired, but the intelligent use of a bill book makes it unnecessary.

Sales Ledgers.—These are loose-leaf, but are not indexed as is customary. They are paged. A customer has the same page as long as he deals. When one page is full another is paged with a numbering machine and put in its place. It is necessary to carry a separate index with this plan. The reason for paging the ledger is that by this method a salesman's accounts are kept together. Every salesman has 50 or 100 pages. For instance: Perkins' accounts run from 1 to 50; Wilson's from 50 to 100; Jones, having a greater number of customers, has the pages from 100 to 200, and so on with the other salesmen. Probably Perkins' accounts take only 24 pages. The next page in the ledger will be 50, the first of Wilson's accounts. If Perkins gets a new customer, page 25 is put in. The ledgers are ruled as per Fig. 3, and explains itself. The sales are posted by the sales book page and not by journal page. See illustration of sales journal, also of ledger, which shows sales book number and page. As bills are paid they are checked off along


LOS CITY LEDGER

NAME Ernest D Wilson

ADDRESS Robins ADDRESS 42 3d Ave

TERMS 2% prompt

DATE		ITEMS		DR		CR		DR BALANCE		DR BALANCE	
1900		1900	No.								
Jan	2	32	10	10	50			10	50		
	4		108	11	03			21	53		
	31	34	1	105				126	53		
Feb	1	'	60	3	38			129	90		
	4	'	901	11	05			140	95		
	'	C	32			125	47	15	48		
	'	J	102			1	05	14	43		

with the credits balancing them. (See Fig. 3.) All charges and credits open should make up the "balance." With all cash turned in the salesman

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must give the book-keeper a settlement slip showing just what bills are paid. (See Fig. 7.)

SETTLEMENT
WITH
F. R. Wilson
Feb. 4/00 SALESMAN Perkins

1900 Jany 1	10	50
4	11	02
31	105	
	126	52
Less discᵗ. 1/31	1	05
	125	47

The Cash Department.—To begin with, the bank account is kept on the stub of the check book. The books used are as follows: (1) blotter cash, (2) daily cash, (3) auxiliary cash, and (4) a memorandum book called C. O. D. and cash sales. The blotter cash is a common book into which is written in pencil all receipts (of all kinds) and payments of cash. There are two blotter cash books, used day about.

The Daily Cash.—(See Fig. 4A and 4B.) This book is a copy of the blotter cash and of the regular check book. All postings are made from this

DR CASH

DATE		LED FOLIO	NAME	A to M CITY	L to Z CITY	A to M COUNTRY	L to Z COUNTRY	CASH SALES	GENERAL	AMOUNT
1900 Jan 1	✓		To Balance							3582 07
	✓	821	T. F. Johnson			32 35				32 35
	✓	508	R. F. Smith		81 25					81 25
	✓	810	W. F. Rose				11 00			11 00
	✓	42	A. D. Adams	32						32 00
	✓	80	Refund P.R.R. Bill "Mdse sugar						1 35	1 35
			Cash Sales					252		252
	✓	98	P/R W. F. Rose						380	380
	✓	150	Int " "						1 32	1 32
			Forward							

CASH CR

DATE		LED FOLIO	NAME	A to M CITY	L to Z CITY	A to M COUNTRY	L to Z COUNTRY	MDSE	GENERAL	AMOUNT
1900 Jan 1			Mdse. Am. Sug. Rfg. Co					1102 32		1102 32
			" B.T. Babbitt					508 00		508 00
			Exp. W.I. Reed rep wagons						240 00	240 00
			Mdse P.R.R. Frt. Sugar					81 32		81 32
			T. F. Johnson pro. ck. ck.			33 95				33 95
	31		Mdse. Exp. & Frt. per ABC					285		285
			Exps. Exp. & Frt "						32 52	32 52
			Expense "						3082 50	3082 50
			Sales Expenses "						600 05	600 05
			Labor "						4892 86	4892 86
			By Balance							32480 08

book. An assistant writes up the daily cash and must be familiar with the accounts in the several ledgers. The stubs of the check book state the account to which the charge belongs and the amounts are extended in the proper columns. The "merchandise column" is posted in total to the Dr.

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of merchandise in the general ledger. (The footings of the columns are carried on day by day to the end of the month and a summary made.)

The auxiliary Cash Book.—(See Fig. 5.) This is a cash book with only one side. It could be called, just as well, the auxiliary disbursing cash

AUXILIARY CASH BOOK
CASH CR

DATE	L	FOLIO		FRT. & EXPRESS. MDSE	FRT. & EXP EXPENSE	EXPENSE	ALLOWANCE EXPENSE	LABOR	AMOUNT
1906 Jan			P.R.R. bills	3 42	1 08				4 50
			Metawan Bank Exch.			1 35			1 35
		86	F.C. Mylee on %					50 00	50 00
			Pay Roll					1042 00	1042 00
			W T Foster Exp Dec				34 08		34 08
				285 00	32 52	3082 50	600 05	4892 00	8892 93
	31		To Daily Cash Book	285 42	32 42	3082 42	600 42	4892 42	
Feb	1		First Nat. Bank N.D. Exch			93			93

book. It is handled only by the cashiers and the general book-keeper. Items of cash or checks given which come under the division as illustrated are put through this book. Items of a private nature, such as payments of salary to officials, heads of departments, etc., and checks for dividends, or anything which it would be better not to put through the daily cash book, can be put through there. There is a posting column and items can be posted direct to their proper accounts in the general ledger from here. At the end of the month the totals of the columns are written into the daily cash book and posted from that book. The balance of the auxiliary cash book, which has been posted direct, is written into the daily cash book as "sundries" and marked "||" in the posting column, which shows they have been posted elsewhere. (See illustrations, Figs. 4A and 5.) This will make the daily cash book at the end of the month show the actual cash on hand. A separate check book can be kept for the payments of a private nature spoken of, the footing to be carried into the regular check book where the bank account is kept. The cash sales and C. O. D. items are credited in one sum to "cash sales" and extended into that column at the end of each day. The total of this column at the end of the month is credited to "sales merchandise." A number of pages of the sales book is reserved each day for charging C. O. D. and cash sales. The name, carrier and amount is copied into a book for that purpose and the charge "lined out." As they are paid, they are checked off.

Purchase Department.—This department checks all bills and pays them. The items of the invoice are checked by the receiving clerk's book—"goods purchased." The bills are kept on file until checked, when they are placed in a cabinet with 31 pigeon-holes numbered from 1 to 31. These numbers are the dates of the month when bills are due. For instance, a bill is dated January 10th and due on the 20th. That bill is placed in pigeon-hole No. 20. On that date all bills in that compartment are taken out and paid. The general books are ledger, journal and cash book. The trial balance shows

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the accounts in the general ledger. There are no accounts kept with the sales ledgers in the general ledger. With so much transferring, cross entries, etc., between these ledgers and the general ledger it would require considerable "journaling" to keep them. Their balance sheets are sufficient, which are proved as per Fig. 6. As the cash postings have been made from the daily

C

A & K CITY LEDGER Balance Feb. 28-1900

	DR.		CR.	
Balance				
Jany. 31/00	45250	32	Cash	36847 54
Sales	34802	05	B/R	692 28
Cash	286		Mdse.	692
	13	25		18 08
	52	05	X	11 32
	32	01		250
X	11	02		13 06
	85	80		38,564 28
	382	20		
	80914	70		
	38564	28		
	42350	52	Bal. Feb. 28/00	

Amounts marked with X are transfers effective, this ledger taken from its own cross entries and the others.

B

TRIAL BALANCE

	DR.		CR.	
Capital Stock			300000	-
Reserve a/c			10470	
Merchandise (Inventory $82108.18)	800 220	10		
Real Estate	200000			
Plant Machinery etc	19 540	85		
Teams Wagons & Harness	300	10	50	
Bills Receivable	231	08	15	
Sales Merchandise			954248	11
Bills Payable			10000	
Labor	108 360	32		
Interest			1682	32
Insurance (unexpired $32.10)	1	600	03	
Expense a/c (Inventory $221.82)	98	778	10	
Salesmens Expense	6	193	45	
Advertising	5	000		
Donations		820		
Cash	37	135	11	
Sundry Creditors a/c			30020	10
A & K City Ledger per bal book	42	350	48	
L to Z " " "	3	705	48	
A & K Country " " "	41	002	05	
L to Z " " "	43	883	18	
	1611	382	72	1611382 72

and auxiliary cash books, the general cash book will deal with totals only—each day's total Dr. and each day's total Cr. marked "||" in the column to show it has been posted. All the bills for goods received before the end of the fiscal year and counted in the inventory but not paid, are journalized—charged to merchandise, expenses, etc., and credited to "sundries" (creditors') account. Later when these bills are paid the amounts are charged to "sundries" account, thus balancing it.

The Trial Balance (Fig. 8), the P. and L. Statement (Fig. 9), and the Balance Sheet (Fig. 10) need no explanation.

9

PROFIT & LOSS STATEMENT

Sales Merchandise			$954248 11
Merchandise	$800 220 10		
Less Inventory	82 108 18	708 111 92	
		246 130 18	
Interest		1 682 32	
		247 732 48	
Labor		$108360,32	
Insurance	1600,03		
Inventory	32.10	1567,93	
Expense	98778,10		
Inventory	82 108,18	89670,28	
Salesmens Expenses		6.193,45	
Advertising		5.000,00	
Donations		820.	
Loss on accounts		3.700.	
" " B R		1250	
Depreciation Plant a/c		750.	
Teams Wagons etc		1.200	219 128 28
	Net profit		$ 28561,50
Resolution of the Board			
Dividend a/c	$ 20000		
Reserve a/c	8561,50		28561,50

10

ASSETS & LIABILITIES

Real Estate	200000		
Plant Machinery etc	14790	85	
Teams Wagons & Harness	285	10	90
Merchandise on hand	82	108	18
Expense Stock (Insurance on hand)	6911	82	
Insurance (unexpired)	32	10	
Cash on hand & in Banks	37	135	11
Bills Receivable	23	858	15
Accts Receivable per Ledgers	180	090	11
Capital Stock			600000
Reserve a/c			19031 61
Due Sundry Creditors			38020 10
Bills Payable			10000
Dividend a/c			20000
	934051	79	934051 79

In the following system of accounting the necessary books are: Purchase Journal, Check Register, Order Register, Journal-Cash Book, Purchase, City and General ledgers, separate books, and three Country Sales ledgers, in which the accounts are classified by States. For instance, "A"

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ledger will contain accounts in Wisconsin and Michigan; "B," Minnesota, North and South Dakota; "C," Iowa, Montana, and miscellaneous. If collections are made by travelers, we would classify our accounts by travelers' routes, but a salesman is handicapped by giving attention to collections, and they do not usually make good collectors anyway. As collections are to be made from the office, we classified accounts as first mentioned.

A labor-saving system is not where all your books are bound in one or two. Some prefer only two books—a bound ledger large enough to hold accounts that may be opened for all time, a 200-pounder, requiring a warehouse truck to transport it and a derrick hoisting apparatus to handle it; a sixty-column journal to match that requires a plumb line to guide your eye across the page. In such a journal, when you have a certain class of entries to make, for instance, a page of creditors' invoices, you use two columns, the balance of the page goes to profit and loss. As we must buy before we could sell, one of the first questions that suggests itself is a method for handling invoices of goods purchased. Please note form No. 1, purchase journal, a

PURCHASE JOURNAL

Name		Remarks	Date	Creditors				Paid	Customers	General
				Amount	Pay					
					5th	15th	25th			

book in which all purchase invoices are entered—name, date and amount, and from which all postings are made direct to the purchase or creditors' ledger, except, of course, any items that might appear in the other two columns, customers and general. They are there for a purpose, which will be explained later. This purchase journal embodies a feature also for keeping track of invoices to pay, assuming that all bills shall be discounted. It is desirable that certain days be set aside for settlement of purchases, and as most all grocery goods are discountable in from ten to fifteen days, the 5th, 15th and 25th of the month are good settlement days for "out-of-town" purchases. To clearly illustrate I will give an example. Presuming we have entered a number of invoices from different firms, dates ranging from the 1st to the 15th. Opposite each amount of those invoices dated from the 1st to the 10th we place an X check mark in the column headed "15th," and opposite invoices of a later date we check in the "25th" or "5th" column, as the case may be, figuring ahead about ten days from the date of the invoice. It will be seen that when we refer to this purchase record on our settlement days, the invoices due to pay or discount are indicated to us at a glance, and

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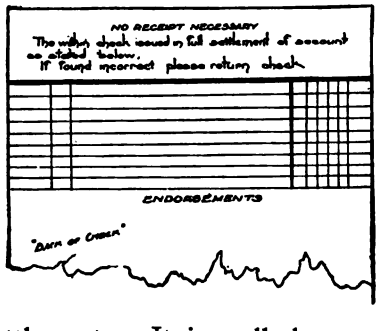
we turn to the invoice clip for the desired bills, which have now been through the buyer's hands, prices OK'd, extensions checked, etc. We will settle all city accounts once a month, checking the statements rendered to us with our ledger accounts, and, of course, examining all the bills and attaching them to the statement, which shall be our voucher for the disbursement. Let us follow a creditor's invoice through the "mill." It is received, recorded in purchase journal and settlement date checked. We then copy into a freight receiving book (which shall be nothing more than a book with horizontal rulings, 200 or 300 pages about 8x12 inches), the name of shipper, car number, if any, routing, then the items any other information that the receiving department should know. We stamp the invoice with a rubber stamp something like this: Price OK....., Extensions OK....., Items OK....., Receiving Book Page..... Note the receiving book page thereon and pass it to the buyer, who OK's the prices or makes note of any overcharges—notes that freight is to be deducted perhaps—after which extensions are checked and the invoice put on the clip for settlement in due time. Post all invoices to your ledgers just as they are rendered, errors and all, if there are any. When you pay, make your remittance statement from the invoice, and charge back any errors, overcharges, freight allowances, etc., through the check register at the time you charge the account with the check, referring always, of course, to the ledger account to ascertain that there are no debit items to be deducted in settlement and which would not show on the invoice goods returned perhaps. When an invoice is paid, so mark it with a paid stamp, note the check No. thereon, and stamp "Paid" opposite the amount in your purchase journal with a neat little rubber stamp. A blank statement (for No. 2) on the back of the check is a good idea, and nothing more will



be needed for most settlements. It is well, however, to have a separate blank remittance form, and when this is used take an impression and note the copy-book page on the back of the check. Our checks will be made with stubs, and not bound in book form, but put up in tabs of 100 each. We will not often have use for the stub, for when we draw checks for settlements,

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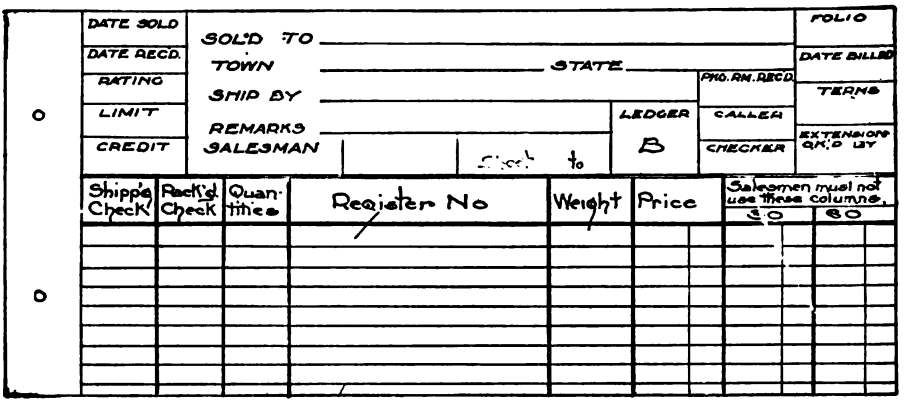
we will make our entries in the check register direct from the check. However, we will have the stub there in case it is needed. It may be more convenient sometimes for the book-keeper to make a stub memorandum temporarily, or, a member of the firm might draw a check, in which case we would not want him to make entries in our books.

Order blanks will be ruled like form No. 3. Salesmen should be furnished with pocket order books for their convenience, but we will require



them to send all orders in on regular order blank forms. Before they start out, drill them well on the subject of writing orders legibly, to use special care in spelling names and places, and little trouble will be experienced from that source. When orders are received they should be stamped with date of receipt and passed to the desk of the credit man, who, if he passes favorably upon it, would put his official OK thereon in the proper space for it. The order should then be passed to an entry clerk, that date, name of customer, town and state, may be entered in the Order Register (form No. 4), which

ORDER REGISTER AND SALES RECORD

Date	No	Name	Town	State	Salesmen's Sales			
					A.W. Moores	W.A. Marr	W.M. Burns	Mail

will serve also as a Salesmen's Sales Record, as we are to base their salary somewhat upon the volume of their sales. It will be observed that the lines are numbered numerically, and when an order is entered the register number is stamped thereon with a numbering machine or pen, as preferred.

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To keep a copy of all orders in the office for fear that one may be lost in the shipping room is a waste of time and money. Furnish the shipping department with a supply of order holders (there are a number of excellent ones on the market), impress upon shipping department and packing room men the importance of returning all orders that pass through their hands, and I would not be surprised if there never was an instance of a lost order. We have it registered, and if it does not come back promptly, let it be the duty of some of the office force to ascertain the reason.

Now, while it is probably not desirable to keep separate department accounts on our ledger, for shipping purposes we will have what we might call the bulk and shelf-goods departments. In the shelf-goods department we will keep candies, cigars, pipes and all small box goods. The original order should go to the department which is to supply the larger number of articles. To illustrate: If an order called for two barrels sugar and quite an assortment of cigars, candies, etc., the original order would go to the shelf-goods department, the sugar part would be copied off on a memorandum slip and given the same register number as the original. The slip could be smaller in form, ruled with quantity column, for name of customer, town and state, but used only to facilitate getting out goods for shipment, the slip going to the bulk goods department when the original went to the other department, and vice versa, the original always going to the department supplying the most goods on the order. When the shipment is completed, the order, with the memorandum slip pinned to it, if any, is returned to the office and compared to ascertain that no item on the slip is crossed off as being out of stock, and if so, must be crossed off the original and back-ordered. It will be found that the majority of orders can be filled from the original, and by this order method we obviate making more than one bill for a shipment, which is frequently done by many large houses. The order is now ready to be priced, if prices do not already show, figured, the extensions checked and billed. Billing on the typewriting machine is the neatest and most rapid way. Orders are now stamped A, B, C or D, as the case may be, for its respective ledger, and it is "up to" the book-keepers, and we ought to have about three, including the cashier, for 5,000 accounts, or about 1,500 accounts to a man. Mail orders will, of course, have to be copied, but we can furnish our better customers with blanks and reduce order copying to a minimum.

The Sales Ledger will be the loose-leaf style, ruled as shown by form No. 5. In most grocery accounts the debits exceed the credits two or three times, and to save space and make the account more compact we will have two debit to one credit column. Each ledger is self-indexing. That is, to each letter of the alphabet is apportioned a certain number of pages and

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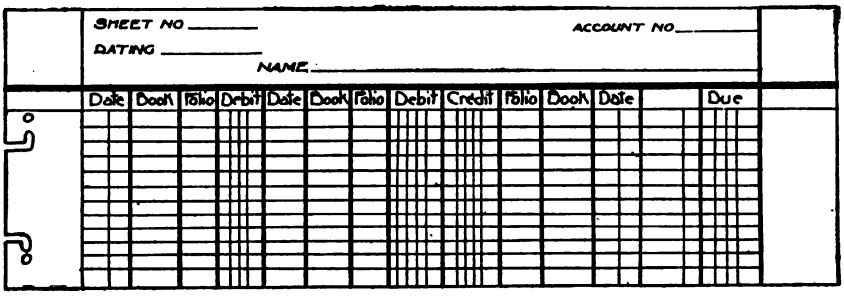
each division has its index page, with its tab bearing a letter of the alphabet marking that division. By exercising a little ingenuity a book-keeper can so arrange and classify the accounts on the index page that to locate a name is almost instantaneous.



We will not take off monthly the balances of our sales accounts in detail, but by the use of a separate column for customers, creditors and general ledger items in all the books of original entry, we ascertain at the end of the month the total debits and credits that have been posted that month to customers or creditors accounts, and we post these totals to corresponding accounts in the general or private ledger, which represent the balances on our sales and purchase ledgers. By this method our trial balance is confined to our general ledger, and if we have proved during the month our postings to our sales and purchase accounts, the taking of a trial balance is the least of our troubles.

There are numerous schemes for proving postings. Suffice to say that any book-keeper with a "proof of postings" hobby, can ride it as freely with this system as any other. Where more than one book-keeper works on the books, it is not a bad plan to use slips for posting, dropping one slip in the ledger for each amount posted, then one calling back the items to another who takes them down with a pen or on an adding machine. By this method we can have debit and credit slips for each sales ledger, and for our purchase ledger as well, thereby making it possible to prove each ledger independent of the other, whenever it is desired to take off the balances of accounts in detail.

One quite important feature of the sales ledgers needs an explanation—that of the due column. The terms on which most goods in the grocery business are sold is 30 and 60 days, and accounts are usually quite active; that is, here are numerous charges each month. We would render a state

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ment of all unsettled accounts once a month only. Statements are printed with a foot-note:

> "Above is a memorandum of your account, of which $..... is due ..... We send each customer a statement at the end of every month for comparison of accounts. If NOT correct, please advise us at once. If not otherwise advised, we will consider ourselves at liberty to draw AFTER MATURITY without further notice.
>
> "Yours respectfully,
>
> "TWENTIETH CENTURY GROCERY CO."

If an account is past due, we will leave the space after "is due" blank; if it is due on a certain future date, we so mark it; if several bills are due at different future dates not far apart, we assume an average date; if an account should show two bills, for instance, one due the 5th and the other the 25th, we would mark the two items and the two dates on the statement. Then these amounts and dates, as shown on the bottom of the statements, are noted in the due columns of the respective accounts, about on a line with the last credit item. Then, after our work incidental to the first of every month is out of the way, we will go through the ledgers and stamp the current month before the due amount, using a neat little rubber stamp and a red ink pad. Now, on the 10th and 20th of each month, we will make sight drafts for all due or past due accounts. In running through the ledgers our eye quickly catches the items stamped the current month, and by reason of the credit side of the account being reversed, the amount column to the left, the close proximity of the last credit date to the due amount indicates at a glance that a payment has or has not been made since the 1st of the month, which determines whether we shall make a draft or not. One reads the name and amounts to another, who writes them in a Collection Register, with numbered lines, and calls back the No., which will be the draft number. This number is noted across the due amount in red ink. When amounts have all been drawn off, the name of banks are filled in on the register and the draft is then made from the register. Drafts and remittance letters are written at the same time by the use of pen carbon paper. The draft and remittance forms are put together alternately in tabs of 100 each and the printed matter so arranged that when the draft is written the remittance blank is filled in at the same time. Collections are sent direct to country banks.

Good rating does not always mean good credit. The manner in which a customer meets his bills is an excellent criterion to be guided by in granting credits. And this scheme of keeping a record of due amounts on the ledger has many advantages. It enables the credit man to tell at a glance how promptly accounts are paid, how long an account is past due, whether customer pays drafts or not, and whether there is one out for collection.

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The Check Register (form No. 6) is a reversal of the usual order of things in book-keeping. The right-hand page is all debit columns. We get the debit and credit of our bank account from the two left-hand columns, and if we keep them footed in pencil on the same line, the state of the

CHECK REGISTER

Deposits		Checks Drawn			To	For	CREDITORS				Gen. Ledg. Accounts	Customers Accounts	
Date	Amount	Amount	No.	Date			Debit	Deductions Debit			Debit	Debit	
								Cash Dis.	Ditg. & Exchg.	Freight			

bank funds is plainly shown. The right-hand page provides columns for a distribution of all funds disbursed through the bank. A check is seldom drawn that is chargeable to a sales ledger account, but we will make provision for an emergency and have such a column in the check register. Reference has already been made to settlements, but perhaps the three columns, cash discount, overcharges, and freight, under the head of creditors, need an explanation. After entering a check in check column, crediting bank, we enter the same amount to the right, debiting creditors, and on the same line in their respective columns, cash account, overcharges, and freight, one or all, as the case may be. We post to the individual creditor's account each of the last-named items separately. In fact, we post separate items from all the columns in this book, excepting only from the bank columns, which are posted in total at the end of each month. As heretofore mentioned, we must keep the equilibrium of our general ledger; we therefore post also the total of the four columns under the heading of creditors to the debit of creditors account in the general ledger, credit returns and rebates purchases, and credit discount account, credit freight with the totals of their respective columns. It will hereafter be explained that all totals are recapitulated in the journal, and that from there they are transferred to the general ledger. Freight items should all be paid by check, and all the expense bills covered by a check pinned together with a slip attached bearing the date and number of the check, and then filed in a file with a division for each railroad.

Make it a rule to pay freight expense bills every Tuesday. Check up bills in the meantime and have checks drawn for each railroad ready for collectors when they call. Post the total of each bunch of expense bills to freight account, using for an explanation in the ledger the R. R. initials and checks number.

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Form No. 7 is the Journal Cash Book, and I believe needs no special explanation. Its use will be principally to record the daily cash receipts and for the closing entries each month. At the end of each month we will gather the totals from the sales binders, credit memorandum binder, check

JOURNAL CASH BOOK

Date	Names	Town	State	Remarks	Customers		
					Debit	Credit	CREDIT Dis. & Ex. on Collections

JOURNAL CASH BOOK

	Gen. Ledg. Accts.		Creditors		Sales Credit		Int. & Dis.		Cash	
	Debit	Credit	Debit	Credit	Time	Cash	Debit	Credit	Debit	Credit

and purchase registers and recapitulate them in the journal. As each mail brings remittances they are passed to the cashier and cash discount or other deductions investigated to ascertain their correctness. Remittances will not be entered immediately, but without separating the remittance letters from the drafts, will hold them until an hour or two previous to the bank closing hour. The entire lot should then be arranged alphabetically according to the accounts, then separated in piles for the different ledgers, keeping them in alphabetical order, and the whole lot entered at one writing, entering the town and state, as well as the name of account. After comparing deposit slip with journal footing, we debit and credit cash and enter the same amount in the check register. Column headed "6 Credit—Dis. and Ex. on Collections," is a credit to customers, a debit to regular Int. and Dis. account.

Nearly all cash receipts in a wholesale business are in the form of checks or bank drafts—very little currency—but all cash receipts to a cent, of whatever nature, shall be deposited in the bank each day. Cash sales for one day are held till the following morning and included in the deposit for that day. Nearly all disbursements should be by check, but for petty expense items, for such other items as is more practical to pay by currency, and to supply the cashier with change, checks are drawn to his order and charged to an account with him in the private or general ledger. He takes vouchers for

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all disbursements and carries them as cash items to the end of the week, or month perhaps, at which time he numbers and lists them according to the dates and turns them in for credit, after having them OK'd by some member of the firm. General expense items are charged to that account in total, other items in detail to their respective accounts, and the cashier credited with the grand total. A cash column in our journal is in fact not a necessity, for the cashier will keep a blotter in which he enters in detail petty disbursements, and cash sale items from salesmens' cash return slips.

Our general ledger is the old style bound book, double-double ruling, with good, wide explanation columns. The stock ledger was a common form.

The idea in this system has been to eliminate "blind" total from expense accounts. What is meant by blind totals is the footings of expense columns in a journal or cash book for a month; footings that are made up of many, many items. An expense account—and I do not mean general expenses only, but traveling expenses, freight, insurance, etc.—cannot be dissected without blundering through four or five hundred pages of a journal and cash book, and several, perhaps. While by our method the general expense account will show a total of petty expense disbursements, it bears a reference which directs us to the cashier's approved vouchers for a certain month. Our insurance account shows each separate insurance bill, the name of agent or company, number of check that paid it, on the back of which is a statement showing policy No., etc. The same scheme should be carried out through all expense accounts, thus making an audit of bills and an examination of the books a more simple matter than is usually the case in many business houses.

To make an audit of bills and an examination of purchase accounts, a simple matter, we will adopt the numerical system of filing invoices. The plan includes the use of the letter file, or transfer cases, with numerically arranged indexes. Each account is assigned a separate division and the number of this division entered on the ledger page of that account. Thus, your ledger becomes the index to the invoice file.

If the buyer should desire to refer very frequently to the filed invoices and it should not be convenient to come to the book-keeping department for the file numbers, he can easily be supplied with a small book index, which he can keep in his desk, and as new accounts are opened the names added to his index.

In this method we have a close second to the voucher system of handling invoices, and does away with much of the labor required by the latter method. As mentioned heretofore, each invoice, or bunch of invoices paid at one time, bears the date of settlement and check number.

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ANNUAL FINANCIAL STATEMENT.

RESOURCES.

	Debit.	Credit.
Accounts Receivable	$242,463 90	
Notes Receivable	4,683 87	
Stocks and Bonds	10,000 00	
Cash in First Nat. Bank	26,369 40	
Cashier's Cash	242 06	
Furniture and Fixtures	6,000 00	
Accrued Interest on Notes Rec.	262 00	
Merchandise Inventory	210,325 40	$500,346 63
LIABILITIES.		
Accounts Payable		680 63
Present worth, Dec. 31, 1901		499,666 13
GAINS.		
Sales, net		644,714 46
Purchases, net	642,624 20	
Freight added	36,526 40	
	679,150 60	
Less Inventory	210,325 40	468,825 20
		175,889 26
EXPENSES AND LOSS ITEMS.		
Rent	10,000 00	
Insurance	3,767 90	
Officers' Salaries	18,000 00	
Salaries of Office Employees	24,462 08	
Salesmen's Salaries	18,000 00	
Salesmen's Traveling Expenses	16,638 45	
General Expense	31,417 93	
City Delivery Expense	1,494 65	
Profit and Loss (bad debts)	2,442 12	126,223 13
Net Gain, year ending Dec. 31, 1901		49,666 13
TWENTIETH CENTURY GROCERY CO.		
Capital paid in	450,000 00	
Net Gain	49,666 13	
Present Worth		499,666 13
DISPOSITION OF GAIN.		
Gain	49,666 13	
Dividend, 10 per cent		45,000 00
Surplus Fund		4,666 13
	$ 49,666 13	49,666 13

Our credit memorandum "returns" are similar in form to our order blanks, but of different colored paper. All rebates, allowances for short-

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ages, etc., shall not be credited to accounts in sales ledgers except they come from these slips, which shall be OK'd by the credit man or member of firm.

Traveling men are credited with their salary each month, and paid by check as they make requisition. A separate traveling expense account is kept with each traveler. They use the "common sense" weekly expense books, and the total expenses of each man for a month, as shown by these books, is credited to his traveling expense account, using as an explanation the dates of the weekly books. Traveling expense is debited, using as an explanation for each amount the name of traveler.

Railroad shipping receipt books were the duplicate form, bound, and a separate book for each road, the name printed on top cover and back edge. The name of road and barrels, boxes, kegs, sacks, etc., printed in the form.

Office and warehouse employes were paid once a week in currency, a check being drawn for amount of pay roll and the money put in envelopes.

The annual sales of a wholesale business may be $100,000, or perhaps less—they might be 1,000,000 a year or more. A system of book-keeping for the former would be somewhat different in its details from a system designed for a business of the latter proportions. The foregoing outline is suitable for a business employing about ten or fifteen salesmen, with annual sales amounting to from $500,000 to $750,000.

The system of accounting here described is intended for a wholesale hardware company carrying all lines of shelf goods, also a stock of yard goods and implements. Doing all their own cartage to and from yards and warehouses, they employ considerable unskilled labor.

The system is designed to give the management each month prompt and accurate statements of the business done and expenses incurred, as well as to show each month the actual position of the company as regards assets and liabilities, and the profit and loss on the sales of each department; also to clearly indicate the cause of any sudden or abnormal change in the condition of affairs from time to time.

For our present purpose we will assume the business is divided into the following seven departments. The first four we will call stock and the others operating departments:

A—Shelf Goods.
B—Warehouse Goods.
C—Yard Goods.
D—Implements.
F—Shipping and Receiving.
G—Stable and Yards.
H—Office.

At the outset it may be well to note the difference between stores and stock and between wages and salaries as the terms are hereafter used. Stores we assume to represent all material except stationery and fuel, intended for the actual use of the company. Stock represents material and goods ready for sale and delivery. Transfers of one to the other are provided for by means of "working orders." The difference between wages and salaries is that the former represents payment to those whose services are valued by

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the day or hour, and who are required by time tickets or other means to report upon what work or class of work their time has been expended. Salary is the payment made for an employe's time in bulk and to a much greater extent than wages is supposed to insure his sympathy and interest, as well as his efforts, for the best interests of his employer.

The time of all employes is recorded by themselves by means of a time register clock. The time clerk enters the time as shown by the clock each day in a time wages book for employes paid wages and in a time record book

FORM 1 TIME WAGES BOOK · HALF MONTH ENDING. _____

No	Name																Total Time	Rate	Wages Due	Remarks

Note:- Wages being paid twice a month, there are spaces allowed for 16 days.

for all others. It is his duty to see that all the time entered in the time wages book each day, and paid for twice a month, is accounted for by a time card showing to which of the various working orders the time is to be charged. He then extends the time for each order at the employe's rate

FORM 2 TIME RECORD BOOK · HALF MONTH ENDING _____

No	Name	Time Lost														Full Time	Total Lost	% Lost	Remarks

Note:- Percentage of time lost by salaried employees is made up twice a month

per hour and posts it to the working order cash sheets. Material used upon such orders is charged out to them by means of charge slips made out by those responsible for the various stores. These slips often being priced and extended, are also entered upon the cost sheet of the order upon which they

FORM 3 TIME CARD

Dept. _____ Date _____

Rate per day _____ Workman No. _____

Order No	Hrs.	Min.	Remarks	Posted	Value	

Foreman Signed

are issued, any surplus material being returned to stores and credited to the order upon which it was drawn by means of credit slips. These credits are entered on the cost sheets in red ink and deducted from the gross charges

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when the latter are totaled up at the end of each month. The time record book is merely for the information of the officers of the company as to the regularity or otherwise of employes.

WORKING ORDER COST SHEET

Date_____ No_____

Wording of Order

Class of Account									Account			
Material									Wages			
Quantity	Article	Price	Stones	Stock	Fuel	Feed	Stinx	Misc'l.	No	Name	Time in Value	Extension

For the purpose of keeping distinct the expenses of the various departments orders are issued from time to time to the heads of each department specifying what shall be charged to such order and also the account to which the cost of such order shall ultimately be posted. These orders cover the

WORKING ORDER CHARGE SLIP

Date_____

No._____

I have this day issued the following material on account above No.

Quantity	Article	Price	Value

Signed_____

expenditure of wages and material only, all other charges for similar classes of expenses being distributed to the various accounts by means of transfer entries. These orders are called working orders, as distinguished from purchase and shipping orders, and though virtually issued by the manager,

WORKING ORDER CR. SLIP

Date_____

No_____

I have this day received the following material on account above No.

Quantity	Article	Price	Value

Signed_____

the accountant. what accounting they shall bear. Though they have the same number all year, the cost sheets are closed out each month, the amounts thereon posted to debit of the correct account and credit of wages and stores and new sheets opened for the following month. The total debit to these

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various amounts for wages should of course exactly balance the wages pay roll for that month, and the total stores charged out will, if correct entry of all charges has been made, show the exact amount of material used by the company for a given time.

THE M.R.CO. LTD. STANDING WORKING ORDER

No. 114

Charge to this order all wages & Material used for this order.

Note:- Specify fully, nature of expense covered by this order.

Class of Account	Account	
To	Dept.	Sec'd. Acct.

Remarks:

As regards such special work as will not be continued from month to month, special orders are issued and follow the same course, except that they

THE M.R.CO. LTD. SPECIAL WORKING ORDER

No. C 401

This order authorizes and directs that you.

Note:- Specify fully work to be done under this order

Return to Office when completed

Class of Account	Account	
To	Dept.	Sec'd. Acct.

Remarks:-

Furnished _____ Date _____

Signature of head of Dep't. _____

are returned to the office as soon as completed and the cost made up and put on record. If the expense of a working order is chargeable to any one

THE M.R.CO. LTD. CITY PURCHASE ORDER

To _____

No { P.O. 1100 / W.O. note / S.O. note

Please deliver with invoice

(Note - These numbers are filled in if goods are for a Working or Shipping Order)

Signed- The M.R.Co. Ltd.

per _____

Date

Note:- Invoices for the above cannot be passed to your credit unless it bears the above numbers

department it bears as a prefix to the number the initial letter of that department. If it is a general expense covering more than one department the number bears the prefix "M."

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Stores and stock are purchased by the chief stock-keeper. All purchase orders, however, with the exception of those calling for goods required for immediate shipment to a customer must be initialed by the manager before being sent out. Orders for repairs or work to be done by outsiders are subject to the same rule. The stock-keeper is largely guided in his

FORM 8.A THE M R CO, LTD. LETTER PURCHASE ORDER

To ..... NO. { P.O. 1877 / W.O. Note / S.O. Note

Please ship to us, as follows per. (Note:- These numbers are filled in if goods ordered are for a Working or a Shipping Order)

purchases by information given him by the salesmen of the stock departments, who are expected to promptly notify him of any lines they might think it advisable to order. He also keeps a close watch upon stock ledgers of the various departments.

In the event of the order clerk requiring the purchase of goods for a customer's order, he draws a requisition upon the stock-keeper for what he

FORM 9 REQUISITION FOR PURCHASE OF MATERIAL

To Chief Stock Keeper Date.....

If approved, please purchase for Dept. ..... as follows.

Signed .....

requires. The head of each operating department needing supplies also requisitions for what is required. By this means all the buying is done by one man (subject to the approval of the manager), which in actual practice is invariably found to be the best plan. These requisitions for purchases are bound in books of 100 each, numbered in duplicate and the first sheet of each number perforated for removal. The party requiring goods thus has a

FORM 10 TRAVELERS ORDER

Ship to. .....

via:- .....

Date	No.
Terms	O.K. for Credit

No	Article	Quantity	Price	Remarks

copy of what he has requisitioned for and thus avoids the frequent error of asking for the same goods twice.

Immediately upon the receipt of goods the invoice is checked and handed to office to pass to credit of supplies. If they were purchased specially for a customer's order they are sent to the shipping room and the order

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clerk advised of their receipt. If they were for a working order they are delivered to the party having charge of the work called for by such order and charged out by means of a charge slip as described above.

The travelers are provided with triplicate order books, one copy being left with the customer, one remaining in the traveler's book, and the original

FORM 11. DEP'T. SHIPPING ORDER

To.....

No.....

Stock Dept. .....

The Order of this No calls for the following goods from your Dept:

You will at once
1. Select them and send with this order to shipping room
2. Prepare for shipment - fill in weights or quantities - check off items ready and send this order to shipping clerk.

No	Check	Article	Weight or Quantity	Sold		Cost	
				Price	Value	Price	Value
		Note:- 1. This for such goods as are to be prepared for shipment in shipping room 2. This for such goods as may with advantage be shipped direct from stock dept., and not sent to shipping room.					
Note-	V =	ready for shipment					
	X =	shipped					

being forwarded to the house. On receipt of either a traveler's or letter order from a customer, or of an order by telephone or wire, it is entered in the order register and given the first blank number. The order clerk then makes out out department shipping orders (in the case of all orders except travelers' he previously enters them upon forms similar to travelers' orders), and sends the main orders to the shipping clerk. The department shipping orders, which bear the same number as the main order from which

FORM 12 THE M.R.CO.LT'D. VOUCHER No.....

The M.R.Co.Ltd. Date.....

To.....

		Debit		Credit	
	Debit Credit the above.				

Correct..... Signed.....

they were drawn (and also the letter of the department) are sent to the various salesmen in each department. The goods are laid out for shipment and in the case of small goods are sent to the shipping room. As regards heavy goods, the weights and quantities are filled in, a check mark put in the column opposite each line that is ready for shipment, and the department orders then sent to the shipper. As soon as he has the various goods shipped he puts a plain cross mark on the check mark, which now shows that the different lines are actually in carriers' hands. Before shipping the depart-

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ment orders are compared with the main order of the same number. They are then all handed to the invoice clerk. The main orders are filed away and the day book entry made from the department orders. These orders having been priced and extended, the invoice is made out and customer billed by means of a loose-leaf system. By this system the invoice and day book are written at the same time, by means of chemical paper. The invoice is then detached, leaving the duplicate, which is virtually a page of the day book, ready to file upon a binder for which it is already perforated. On the fact of it it appears as though only one entry could be made on a page of the day book.

FORM 13 PURCHASE BOOK

The M.R.Co,Ltd., PURCHASES for Month of _____ 19__

Voucher No	Credit		Debit																	
	Name	Amount																		
	Note:— This book contains one debit column for each Gen'l. Led. acct.																			

This is overcome by having various sized invoices and so arranged that either one, two, three or four invoices will be on a page. This system, besides the saving of time for the invoice clerk, has the added advantage of enabling the ledger-keeper to keep his books posted right up to date. The invoice clerk using only the pages of the day book containing that day's entries there is no delay when other employes require the day book. The cost column having been filled in in the department orders, they are filed away on binders. The amounts on each order or of each entry in the day book are not added, but at the end of the month they are taken off on total sheets.

FORM 14 THE M.R.CO.LTD., TRANSFER ENTRY No

The M.R.Co.Ltd. Date _____

To _____

		Dr	Cr
	Debit Credit above account		

Correct _____ Signed _____

The total sheets for the day book will show the total amount charged to customers during that month, divided into city and country amounts. The total sheets of the order binder will show the same grand total, but this sum will be divided among and show the amount of the sales from the various departments. This will be seen to be a check not only upon the additions in the day book, but will also go far to prevent the chance of any shipment being made and not duly billed to the customer. In addition to this the total sheets of the order binder show the cost of each sale in each

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department. The information to be had from these two books, taken in conjunction with the expense accounts of each department, enables the management from month to month to make accurate comparisons not only of the expenses, sales and profits of each department, but what in many cases may be found even more valuable to compare the percentage such expenses, sales and profits bear to one another, as well as to those of other departments.

Credits to customers are made only upon the authority of a credit for returns signed by the stock-keeper, or a credit man's signed by the secretary-treasurer. These forms are treated by the invoice clerk exactly as the department shipping orders and filed in a similar binder called "credit binder." The credit book is on exactly the same principle as the day book, already described.

The cash book is ruled to keep distinct cash received or paid out for accounts in the various ledgers. The amounts in the three columns bearing the names of the ledgers are posted in detail to such ledgers and at the close of the month the totals of the other two columns are posted to the accounts bearing the names of the other ledgers.

FORM 15 TRANSFER ENTRY BOOK

The M. R. Co. Ltd. TRANSFER ENTRIES, Month of _____ 19—

T. F.	Credit		Debit																	
No	Account	Amount																		
	Note :- This book contains one debit column for each Gen. Ledg. acct.																			

Supplies accounts are credited by means of a voucher which is entered in a purchase book. To this voucher are attached the various invoices which it is desired to pass to the credit of supplies account. The face of the voucher only shows the total amount to credit and the debit to the various main accounts, to each of which a column in the purchase book is allotted.

The ledgers used are:

Ledger A—Accounts Collectable.

Ledger B—Accounts Payable.

Ledger C—General.

The two former are ordinary loose-leaf ledgers of any of the modern pattern. The names of ledgers A and B are sufficient indication of the class of accounts they contain. In addition to such accounts, they carry each two adjustment accounts, bearing respectively the names of the other two ledgers. This renders them, as far as commercial and book-keeping use is concerned, each independent and capable of proof by balance without reference to the other ledgers.

The general ledger is a locked ledger in which all the internal or working accounts of the company are kept, and also two accounts called respec-

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tively accounts collectable and accounts payable. Ledgers A and B are as a matter of fact only details of the accounts of similar name in the general ledger, and as their names denote, are used exclusively for the accounts of the debtors and creditors of the company. It is of course with the general ledger that we have now to deal.

The general ledger accounts are divided into groups, a number of blank pages being left between each group on which to open new accounts which may be decided upon from time to time. The accompanying "list of accounts" is in the nature of a suggestion only, as the actual accounts required for any one business must be decided by those best acquainted with the circumstances. They cannot be based upon a list which has given proof of efficiency and good judgment under what appear to be similar circumstances and surroundings. If there were many departments it would be well to have the accounts in the general ledger opened only under the heading of each group, a class of account, and by means of a subsidiary ledger divide such main account into as many sub-accounts as might be found desirable.

Date _____ Signed. The M.R.Co. Ltd.
per.

Note:— On Invoice for above goods and in all correspondence regarding this order please quote above numbers.

Detach at this line and return to us

ACKNOWLEDGEMENT OF ORDER

The M.R.Co. Ltd. No. { P.O. 1277 / W.O. / S.O.

Referring to your order bearing above numbers, we beg to advise

Date _____ Signed. _____

At the close of each month the accountant is supplied with a transfer entry crediting wages and material accounts with the expenditure upon working orders and charging the account named upon such working order. Where two or more working orders are chargeable to the same account the costs are grouped together and charged out by the one transfer entry. The amount credited to wages should of course wipe out the amount paid out for wages by the secretary-treasurer during the month. By a similar transfer entry salary account is wiped out and distributed among the various expense accounts in the proportion decided upon by the management. No amounts being posted to the general ledger except from the cash book and transfer entry book, it is necessary to make each month transfer entries for all transactions affecting the internal accounts of the company. These transfer entries are then entered in the transfer entry book and posted to the credit of the various accounts and the total of each column posted to the debit of the account whose name it bears. The total of accounts collectable

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and payable in the cash book having been posted to these accounts, it will now be seen that a trial balance sheet of the general ledger is in itself a very complete statement of the affairs of the company. If from this trial balance a statement is taken off each month showing the total debits and credits to each account for the month and the excess of one over the other, a very valuable subject for thought and study on the part of the management is presented. The sales account being charged with the costs and credited with the selling value of stock sold will of course show not only the amount of sales but the

NOTE A. LIST OF GENERAL LEDGER ACCOUNTS

Group or Class	Name of Account
Building & Equipment	Warehouses
	Sheds
	Tools & Implements
	Stable Equipment
	Furniture & Fixtures
Maintainence Accts	Repairs to Warehouses
	Sheds
	Tools & Implements
	Stable Equipment
	Furniture & Fixtures
Operating Accts	Dept. A Expenses
	" B "
	" C "
	" D "
	" E "
	" F "
	" G "
	Miscel. Operating Expenses
General Expense Accts	Salaries
	Office Expenses
	Rent, Taxes & Ins.
	Trav. Expenses
	Legal Expenses
	General Expenses
Material Accts.	Stores
	Stock
	Stationery
	Fuel
	Feed
	Travelers Samples
Commercial Accts	All the ordinary commercial accts, of a firm or corporation and also, Sales Acct.-Returns and Allowances-Accts, Payable-and Accts, Collectable.

NOTE B. LIST OF MONTHLY TRANSFER ENTRIES

CR.	DR.
Material Accts	Sundry Accts, as per Standing Orders
Wages	" " " " " "
Salaries	" " " Secy. Treas. Memo.
Sales Accounts	Accts. Collectable Total charges to customers.
Accts Coll.	Returns & Allowas. " credits & allowances to customers
Stock	Sales, total cost of Sales.
Returns & Allowances	Stock " " " returns
Accts. Coll.	Dr. Bills Rec. total of notes and acceptnes. from customers
" Payable	" " Pay " " " " given
" "	Sundry Accts, as per purchase book.

profit made thereon at any given time. The stock returns account will of course show a loss of the difference between the amount credited to customers for goods returned and the actual value to the company of same. A careful watch upon the accounts collectable and bills receivable and accounts payable and bills payable will sometimes give somewhat startling information. It is of little use having an efficient operating and selling organization

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building up a big business and selling at a fair profit if the financial organization fail to make the best of the favorable conditions created for them. It is quite possible to be making good profits and have nothing to show for them except perhaps a larger stock and increased book debts, neither of which, prehaps, will be found growing more valuable as time passes.

At the close of the fiscal year a physical inventory of stores and stock is taken and compared with the book records of these accounts. Of course there will be a difference, but it should only be a slight one and an adjusting entry should be made. Buildings and equipment should be charged with the rate of depreciation agreed upon and which, of course, has to be decided after a full study of the particular conditions under which the company operate. All expense accounts closed out and a balance sheet taken off in the usual way. The accounts having been treated as above described, to all intents and purposes the annual closing of the books is but very little different from the work done each month. Though the accounts are not actually closed out, yet the statements furnished the management each month amount to about the same thing—and the same information is obtainable from them as from an actual balance sheet.

In its essential features this system is neither a theory nor an experiment. On the face of it it may appear somewhat complicated; in reality, it is simplicity itself. I have, of course, omitted a description of some of the details, but I would like to say that by means of card and loose-leaf systems the information I have spoken of may be increased and added to, subdivided and elaborated to almost any desired extent. At the same time it is quite possible by an unwise or reckless use of these modern aids to office work to defeat the very purpose for which they were intended viz., the best result for the least time and labor.—K. Falconer.

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PART VII.

Retail Accounting.

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Accounting for Various Classes of the Retail Trade.

NOTWITHSTANDING the great advance made in recent years in the science and practice of accounts, it is only to be expected that in some quarters antiquated and clumsy methods will be yet found, dear to the merchant's heart and the idol of the unprogressive book-keeper's stiff-necked fancy. Useless conservatism is not entirely indigenous to Europe and the Philippine Islands, but flourishes on American soil right beneath the flowing folds of the star-spangled banner.

The book-keeper for a retail dry goods store once complained of the overwhelming amount of work he was called upon to do. He had to deal with a large number of credit sales. Sales tickets were made out in duplicate, the original handed to the customer, and the duplicate to the book-keeper. From the sales ticket the book-keeper copied the items into a day book, and from the day book copied the items into the sales ledger, this latter being considered necessary because the customers required an itemized monthly statement. This naturally leads to the expected information that at the close of each month the items of each bill are recopied from the ledger on the monthly statements. Each sales item is therefore recorded four times in this up-to-date establishment, and with an average of six hundred active accounts the book-keeper's lot is not so happy as it might be.

While the above is an extreme illustration of "how not to do it," there is undoubtedly a great need for improvement in the way in which the average retail merchant keeps his records. No one system can possibly be suggested which will answer all requirements and satisfy all conditions, but we propose in this article to describe the methods used in a number of different businesses, and from these methods many excellent, labor-saving ideas may be obtained.

For general purposes a system as described hereunder has been found very efficient where there are not unusual conditions to be provided against, particularly in those cases where customers demand monthly itemized statements of account. It should be particularly noted that the pass-books mentioned are not given to the customer, but retained and constitute the sales-book of the business, and all the purchases of one

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customer are assembled together, and for some business these pass-books may also constitute the customer's ledger, with a slight modification of the system.

Provide a pass-book for each customer.

Provide a suitable alphabetical file for the pass-books, with vowel and other indexical distribution to accomplish instant reference to the book wanted.

Provide an ironclad ordinance that all pass-books not in use must be kept in the file.

Have the pass-books made in the form of a sales ticket in triplicate, the duplicate and triplicate with perforations to allow of their being detached from the book.

When the customer makes a purchase the salesman enters same in the pass-book and hands the duplicate to the customer, retaining the pass-book.

The book-keeper posts the total purchases (not items) from the pass-book original, and also enters the account on a sales recapitulation sheet in order to obtain his monthly total of sales.

Recapitulation Sheet

Quality	Car No	Name & Address	Description	Teamster	Ticket No		C.O.D.		Cash Sales		Amount Chg'd.	

At the end of the month the book-keeper makes his monthly statements from the ledger and attaches to same the triplicate copies of bills from the pass-books.

By adopting this plan all the itemizing necessary is done at one writing by the salesman who receives the order, ledger space is not unnecessarily wasted, and the book-keeper will begin to have a little time to spare in which to make himself useful to his employers.

Another method is: Have large sized envelopes made with statement form printed on front—debit and credit columns. Enclose duplicate bills in envelopes and post totals on statement. Use cash book with separate columns for cash sales and receipts from customers applying on account. Post from cash book to statement.

File statements in convenient card-index file alphabetically arranged.

Enter amounts of charge sales each day on "recapitulation" sheet.

Use different colored sheets for merchandise credits, or allowances, and post direct to statements, making recapitulation as in case of charge sales.

In small general ledger keep creditors' accounts, expense accounts, etc., also representative account entitled "Customers' Account." To this

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account charge total sales from recapitulation sheets, credit total merchandise returns and allowances and total of special column provided in cash book for receipts. The balance of this account will then equal the aggregate of the balance shown on the statements and so prove the accuracy of the work.

This system can be combined with the one previously described—as above suggested—by filing the pass-books in the envelopes.

The recapitulation sheets above mentioned should be specially ruled so that total cash as well as credit sales may be recorded, and so that the sales may be distributed over the various departments to which they belong.

The illustrations given below will show a very convenient form of Recapitulation Sheet and Comparative Record:

January · 1900 ·

Day	Gen. Mdse.			Groceries			Boots & Shoes			Dry Goods			Total Sales		
	Cash	Credit	Total	Cash	Credit	Total	Cash	Credit	Total	Cash	Credit	Total	Cash	Credit	Total
1	5 75	3 65	9 40		55 96	55 96	3 75	7 64	11 39	24 05	30 76	54 81	33 55	98 01	131 56
2	4 38	18 13	22 51	30 80	93 45	124 25	2 60	6 70	9 30	6 50	53 14	59 64	44 28	171 42	215 70
3															
4															

The total yearly sales in each department may be kept in the same way by entering the total monthly sales instead of the daily as shown.

The following is an excellent form of departmental comparative record, trading account, and profit and loss account combined:

	Department A.															
	March.				April				May				June			
Inventory 2/1	428	90														
Purchases	1965	25														
Salaries	225															
Expense	18	90														
Cash Sales			1458	25												
Credit Sales			1782	15												
Inventory 3/1			392	70												
Gross Profit	995	05														
Turn Over	2001	45														
Sold For	3240	40														
Gen. Exp. percent'g. on turnover 11%	181	95														
Net Profit	813	10														

A subscriber to The Book-Keeper describes a similar system as follows:

The Original Entry Ledger System.

A convenient itemized ledger is something desired by a large majority of small retail dealers, in which they can make the original charges without

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the intervention of the journal. There is no reason why a personal account should not be itemized on the ledger rather than on the journal if the work can be done as quickly and as conveniently. The loose leaf system suggested the plan. I adopted the Yonker statements, double ruled and filed them in binders. It is only the work of an instant to put in or take out a new leaf from any part of the volume. Indexed sheets were used to keep the accounts under the several letters of the alphabet, but in separate groups. This arrangement enabled me to turn to an account more quickly than I could in the ledger, if I had to refer to the index. I used several binders to accommodate the business, subdividing the accounts both according to the alphabet and territorially. This plan enabled me to make the charges to the personal account as soon as the charge tickets were handed in. Then accounts were always written up and always ready for the customer. Whereas, under the old plan, it was impossible to be less than twenty-four hours late. I made the charges to the several accounts about as quickly as I could write the items in the journal. The items of an account were always grouped together, and when I came to enter them on the customers' pass-book (which it was necessary to do in almost all cases), it was the mere act of copying, and did not involve a search through many pages of the journal. As the pages were filled, new pages were added and the completed pages were removd and placed in convenient files.

System for Bakeries and Creameries.

For retail businesses where deliveries are made daily, and accounts are paid weekly or monthly, there is nothing superior to the tabular plan of record as shown below combining the features of sales book and sales ledger, arranged for days, with balance column to carry forward unpaid balances from week to week.

Record books of this kind can be made to run horizontally across the page for a number of weeks without rewriting names of customers. By allowing one line to a name as many as eighty accounts can be accommodated on a page. A recapitulation of totals of pages will give amount of

Names	Bal. Due	Days of Week							Total	Paid
		1	2	3	4	5	6	7		
T. Smith	50¢	25	20	15	25	20	20	20	$1.95	$1.25

sales per week. The total column can be dispensed with as the total charges for the week added to the old balance will equal the amount of the new balance added to the amount paid, provided the work has been correctly performed, and the writing of the total is unnecessary.

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There is also the question of keeping track of the delivery wagons, so that the amount of bread delivered can be checked with the amount charged according to the driver's reports and the amount returned by the driver. One method very much used in this connection is to furnish each driver with a ticket on which will be entered the amount of supplies taken out by him, with space provided so that he can record on his ticket the supplies delivered, where delivered, cash received, amount to be charged, etc. On his return to the store these tickets are checked over and the balance of supplies not accounted for compared with the driver's returns.

Another method is to keep a record of these supplies in a book, charging the driver with the value of the supplies he takes out on each round, and crediting him with the value of the goods he returns and the amount of charges which he reports (on separate memoranda). Experience, however, shows that this method is more laborious than the first.

Retail.

The Adrian Coal Co. does a retail business, handling lump, egg, nut and slack coal, and purchasing in car-load lots.

The principal accounting forms used are:

Accounts Payable and Car Register.
Delivery Ticket.
Cash Book.
Cross-Entry Journal.
General Ledger.
Sales Ledger and Stock Record.

As the company has plenty of working capital, it is proposed to pay all bills on the 10th of each month, taking advantage of cash discounts.. The Voucher System is therefore used, and Accounts Payable are filed away by months in numerical order. Should payment of a bill be delayed, and thus be included in another month's payments, a blank voucher is inserted in the proper numerical order, referring to month and number after which the voucher may be found.

Accounts Payable and Car Register.

This Register contains the distribution of different kinds of coal purchased. An account is opened in the General Ledger with each kind, and the monthly totals of the "Received" columns posted to the debit of these

ACCOUNTS PAYABLE & CAR REGISTER

Invoice Date	Account of	Car No	Contents	Date Recd	Date Empty	Voucher No	Amount	Date	Frgt Paid	Slack			Egg		
										Billed	Recd		Billed	Recd	

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ACCOUNTS PAYABLE & CAR REGISTER

Nut			Lump			LF	Sundries			Reclamation	Check No	Amount	Date Paid	Remarks.
Billed	Recd		Billed	Recd			Billed	Recd						

accounts, which will therefore show the quantities purchased. The items entered in the sundries column will be posted in detail.

In the "Reclamation" column are entered the amounts of claims or deductions in respect to differences between quantities billed and quantities received.

The total of the first "amount" column will be credited to Vouchers' Payable Account in General Ledger. The totals of distribution money columns will be debited to the accounts opened with each kind of coal. The sundries column is intended for miscellaneous supplies to be posted in detail.

The total of the second "Amount" column will be entered in the Cash Book to the debit of Vouchers' Payable Account, which will show on the ledger somewhat as follows:

Vouchers Payable Account.

Dr.	Cr.
Freight	Vouchers for
Reclamations, etc.	month.
Cash.	

The balance of this account will therefore exhibit the amount of outstanding Accounts Payable.

In case it is found inconvenient to carry the Car Record on the Accounts

Car Record

Date	Car No.	Consignee	Date Rec'd	Date Empty	Frgt Rd.	Date	Miscellan's		Lump Coal				Egg and Nut Coal				Slack Coal				Slacks	Remarks
							Inv. Wt	Our Wt	Inv. Wt	Our Wt	Over	Short	Inv. Wt	Our Wt	Over	Short	Inv. Wt	Our Wt	Over	Short		

Payable or Voucher Record form, the above separate form of car record will be found useful.

By both methods the totals of quantity columns are posted to the debit memorandum stock accounts kept with each class of fuel, these accounts being credited with reclamations and shortages. A separate account is carried for quantities sold, as hereafter shown, so that a perpetual book inventory results, which will show amount which should be on hand in the yards.

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Combination Cash-Journal, Etc.

The wholesale and retail business is frequently combined, in which case the car and quantity record may also be advantageously combined by the use of a form after the following pattern:

Date	Ticket No	Order No	Car	Agents	Team	Cash Sales	Where Paid	E Yard Sales	Price	L F	Wholesale	L F	Retail	Name	Address	Remarks
																Bal. Forwd.
10	10	1098	1098	5068	Jones	×								T Wilson	1098 Cong.	

Soft					Hard						Coke				Wood			
Kind	Lump	Nut	Slack	Amnt	Kind	Stove	Chest	Egg	Grate	Amnt	Kind	Nut	Egg		Amnt	Cords	Size	Kind	Amount
								"										

It will be noticed that this is a combination Cash-Journal and out-quantity record, and it could therefore be completed by the use of Form 2, which is an in-quantity record.

In many cases a further distribution is made on the memorandum stock accounts by opening an account with each car and crediting it with sales as indicated later.

Delivery Ticket.

For a delivery ticket a form similar to that appended is recommended. It is made in triplicate, two copies being handed to the teamster and one retained at the office, from which to post the charge. The teamster leaves

No 1798 Alcolu, S.C. 1902

Sold to

Teamster Car No.

Quantity	L.F.	Description	C.O.D or Paid	Amount of Charge	

Received by

one copy with the customer, and the other is signed by the customer and turned in by the teamster as a voucher for the delivery of the goods.

Where orders are very numerous a recapitulation sheet can be used from which to make postings as per sketch.

The C. O. D. and Cash columns will show total receipts each day, and afford a check on the teamsters' collections.

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Cash Book.—Journal.

We show on a previous page a form of combination Cash-journal. Where in-quantities are recorded in an Accounts Payable book or Car Record, and out-quantities in the Sales Ledger, posted direct from Sales tickets, the Cash Book and Journal are much simplified. The Cash Book may be ruled like this:

Cash Received

Date	Name	Address	L.F.	Sales Ledger		General Ledger		Cash Sales		C.O.D.s			

Cash Paid

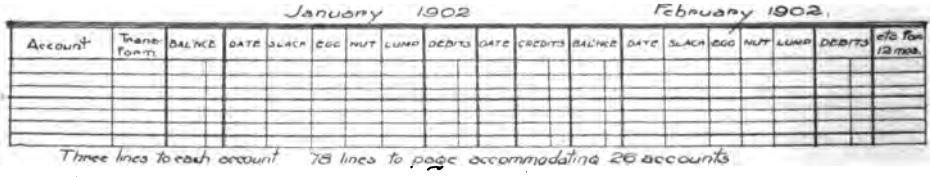
Date.	Name	Voucher No	L.F.	Voucher Payable		General Ledger		Expense		Freight			

The Journal would be used for cross-entries only, such as allowances, shortages, etc., and beside the ledger columns would require on the Credit side columns for material affected, viz.: Lump, Egg, Nut and Slack.

The Sales Ledger can be arranged on the tabular system to contain a record of out-quantities, the totals of which are posted monthly to the credit of the memorandum quantity or stock accounts above mentioned, thus completing same and giving approximate inventory on hand.

Tabular Ledger.

The Tabular, or Self-proving Ledger, is a ledger in which the names are written down the side of a page instead of at the top, a page or a certain position of a page being used for all the transactions relating to an account during a given period, these transactions being extended horizontally across the page instead of perpendicularly as in the ordinary ledger. It is provided



with debit, credit, and balance columns in sections of weeks, months, or days, so that the footing of the debits of the preceding month, week, or

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day, when added to the footing of the debits to the accounts on each page, will agree with the footing of the credits, plus the footing of the new balances, providing the work of drawing off the new balances has been correctly performed. The work on from forty to eighty accounts may by this method be proved by one operation so far as addition, subtraction and setting down of balances is concerned. By this method quantities sold can also be kept track of with facility without the intervention of a sales book by providing columns on the debit side of each section, as per illustration, making a recapitulation of the totals of each page at the end of the month and posting the grand totals to the credit of the Memorandum Stock accounts, the postings to the ledger being made direct from the delivery tickets.

Branch Accounts.

Most large coal merchants have distributing yards and wish to keep an account with each other in order to ascertain which are or are not profitable. All accounts will be kept on the main office books, the yards making a daily report of sales and collections.

Open two accounts with each branch, one called Yard Stock account, and the other Yard Expense account. Debit Yard Expense with all expenditures or liabilities incurred in relation thereto. Debit Yard Stock with quantities and cost of goods furnished for sale, and credit it with sales made—quantities and amounts. At the end of each month these accounts will then show inventory on hand, gross profit, and net profit.

Wholesale.

The Rochester Coal and Mining Co. receive orders from retail customers, which they forward to the mines, from which shipment is made

FORM 1

ORDER SHEET

McAlester Coal and Mining Co., No ____

To _____ (Date) _____

Gentlemen:- Please ship coal as follows for our account.

Sub. No.	Kind	When	To	Destination	Invoice at		Route & Remarks

Yours truly McAlester Coal · M. Co.,

per. _____

direct to retail customers, orders being billed to The Rochester Coal and

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Mining Co., who, in turn, bill their customer. This system does not call for any complicated accounting, but there are, nevertheless, quite a number of forms used, and some of these it may be well to illustrate and explain.

Form No. 1 is order blank sent to mine.

Form No. 2 is advice sent to customer.

Carbons of these two forms are retained, and the particulars entered in the Order and Shipping Record, which is also a daily trading account, showing gross profit on sales to date. This form is ruled in sections of

FORM 2

Oklahoma _____ 190__

_____

We have your order for _____ cars _____ coal, ordered by _____ which shall have our prompt attention.

Thanking you, we are
Yours truly
McAl. C. & M. Co.,

three months, as all accounts are expected to be paid within that period. At the end of the month, Accounts Receivable Account is debited with total of "Amount" columns and Accounts Payable is credited with total of "Cost" columns. A new page is started for each month and unpaid items

Bought of McAlester Coal and Mining Co.,

Date.	Order Sheet	Order Sub	Kind	Ship When	To	At	Invoice To	Date Filed	Car No	Initial	Weight	Tons	Price Sold	Amount Jan	Amount Feb	Amount Mch	L.F.	Invoice No	Date

Order and Shipping Record

Price Paid	Cost Jan	Cost Feb	Cost Mar	Profit Jan	Profit Feb	Profit Mar	Draft Drawn	Draft No	Draft Paid	Reconsigned or Confiscated by Name	Reconsigned or Confiscated by Address	Journal Date	Journal Page	Remarks

at the end of three months may be transferred by Journal entry, crediting Accounts Receivable and charging Sales, as the transferred entries will be included in the charge to Accounts Receivable of the total of the new page. By this method it will be observed that a Sales Ledger is dispensed with entirely, or we may say that this form is a combined Order and Shipping Record and Sales Ledger.

The Order blanks are numbered consecutively, the column headed "Sub. No." referring to the mines to which the orders are sent. Thus orders sent to one mine are sub-numbered: A1, A2, A3, etc. Orders sent to another mine are sub-numbered: B1, B2, B3, etc.

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System for Retail Ice Company.

One of the greatest difficulties encountered in keeping the books of a business of this kind, is the large number of accounts to be handled.

These, for the sake of convenience, are usually kept in territorial order, i. e., all the Michigan avenue accounts are kept together in rotation of numbers of houses. Thus, one account will be headed 1426 Michigan avenue, and underneath this the name of the tenant. The next account will be 1428 Michigan avenue, etc.

Owing to the large number of accounts in a business of this kind it is usually necessary to open a new ledger every year, involving a large expenditure of time and labor.

Also if Mr. F. W. Jones of 4129 Buckingham avenue, owed a balance of $5.00 and removed to 2649 Michigan avenue, it is necessary to transfer the account and great confusion will ensue.

Some ice companies, therefore, have adopted the card ledger system, and have found that it is much easier to keep cards in territorial order than is the case with ledger pages, index cards being provided for each street or avenue, the names of the streets arranged alphabetically, that is, Adams street would precede Bates street, the other streets following in alphabetical order, Charles street, Division street, Ellis avenue, Frankfort street, etc.

When a card is filled up, all that is necessary to be done is to add a new card. In a bound ledger, if the space provided for an account proves insufficient, the account must be transferred to another page, and if the space allotted to Michigan avenue is insufficient, part of the records of that avenue must be provided for in another part of the ledger.

If F. W. Jones removes from 4129 Buckingham avenue to 2649 Michigan avenue, his card also will be removed from that portion of the file containing the accounts of customers on Buckingham avenue, the correct address noted upon it and placed in proper numerical order with the Michigan avenue cards.

The cards can be so ruled as to provide for a large number, usually fifty-two, charges and credits on one side and fifty-two on the other.

When the card is completely filled it is removed to a transfer file and a new card substituted. By this system the accounts with each customer can always be kept together and will not be distributed through several ledgers, as would be the case if they were recorded in a book-ledger.

It is scarcely necessary to say in this connection that the original entries are made on the cards, the totals only being passed through the journal once a week, or once a month, as may be determined by the needs of the business. The debit being Ice Ledger Account and the Credit Ice Sales Account, or whatever representative account may be carried.

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By the card ledger system, accounts with customers can be divided into as many sections as desired, each section being proved separately. This is a great convenience in cases where the volume of accounts is very large.

Separate columns must be provided in the cash book and journal for each ledger section, and separate accounts with each ledger section being carried in the general or private ledger.

The trial balance of the entire business can then be obtained in a few minutes at any time from the representative and nominal accounts.

The accuracy of the balance of each ice ledger account can be determined as found convenient by footing the balances of each section and comparing the total with the balance shown on the representative account in the general ledger.

System for Retail Drug Business.

A large drug store is usually divided into four departments, viz.:

1. Proprietary medicines, toilet articles, etc.
2. Prescriptions.
3. Soda fountain.
4. Cigars.

In order to show how statistics may be obtained with the least possible expenditure of time and trouble, we will describe the methods used in a large drug business recently established. It is an incorporated company capitalized at $30,000, in 300 shares of $100 each, of which A, the President, holds 200 and B, the Secretary and Treasurer, holds 100. There is both a

PURCHASE RECORD

Date of Inv'ce.	Names	Folio	Total	Dep. 1	Dep. 2	Dep. 3	Dep. 4	

cash and a credit business, the credit sales being comparatively few in number. The accounting details to be considered, therefore, consist of purchases and expenses on the one hand, and cash sales and credit sales on the other.

A small purchase record is used, ruled for name of creditor, date of invoice, total of invoices, and four columns for distribution to the four departments. As invoices are received, they are entered in this book and the bills are then filed away under their due dates for cash discounts, no accounts with crditors being carried in the ledger. At the end of the month, this purchase record is footed and the total of the total column is

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credited to an account called Accounts Payable Account. The total of each department column is charged to an account carried in the ledger with that department.

We have now provided for showing in the books the total purchases during the month and the total belonging to each department. The cash paid side of the cash book is provided with a column headed "Accounts Payable." When the bills are paid, they are entered in this Accounts Payable column, no postings being made until the end of the month, when the total of that column is debited to Accounts Payable account in the ledger. The balance of this Accounts Payable account will, therefore, show at all times the amount of unpaid bills on hand.

With regard to expenses, the cash paid side of the cash book is provided with a column for each department so that whenever possible the

CASH RECEIVED

Date	Names	Folio	Accounts Rec'vble	Gen'l. Ledger	Cash Sales				
					Dept.1	Dept.2	Dept.3	Dep.4	

expenditures of each department are charged against that department. General expenses, however, which cannot be charged to any particular department, should be pro rated on the basis of the turnover.

With regard to the sales, duplicate tickets should be used, one color for cash sales and another for credit sales, so that the two kinds of tickets can be readily distinguished. The corporation in question used a cash register in each department. It was one of these new devices which, in addition to ringing up the exact amount of the bill, will record whether cash or credit, and identify the salesman who made the sale. The cash is, of course, handed to the cashier with the ticket. There are separate columns in the cash book on the cash received side for receipts from customers on credit sales and cash sales for each department. At the close of each day, the cashier foots up the amounts of the cash bills and enters the total in the cash sales columns, and the correctness of these totals is checked by the cash registers of the different departments. It is also checked again by the balance of cash.

Another method of handling cash sales, where cash registers are not used, is to make each salesman keep his own cash sales account, giving them different books each alternate day, thus the book used yesterday will be taken up by the cashier and the total of the sales compared with the total of the receipts in the cash book. In this case carriers are usually employed from the different departments to the cashier's office.

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With regard to credit sales, a regular account is kept with each customer on the Loose Leaf Ledger plan, which permits of the transfer of paid accounts to a separate binder, leaving only the live accounts to deal with, which is a considerable advantage. These accounts are kept in alphabetical order on the self-indexing style, so that no index is required. They are posted direct from the salesman's credit ticket without the intervention of any other record. The cash register or the salesman's own record give the totals of the credit sales each day, and the grand total is charged daily to an account in the ledger called "Accounts Receivable Account" and credited in their respective proportions to the department accounts. Accounts Receivable account is also credited at the end of the month with the total of the column provided in the cash book for receipts from customers. This account thus shows the total outstandings due from customers.

CASH PAID

Date	Names	Folio	Accts. Payable	Gen'l. Ledger	Expenses				
					Dept. 1	Dep. 2	Dep. 3	Dep. 4	

The accounts receivable account, the accounts payable account, the department accounts, capital account and any other representative accounts, should be kept separate from the customers' accounts, because the trial balance is taken entirely from the former as per the following example:

Dr.		Cr.	
Cash and Bank	$11,562 00	Capital Stock	$30,000 00
Accounts Receivable	5,295 50	Accounts Payable	1,495 00
Furniture and Fixtures	2,175 00	Interest and Discount	56 75
Patent Rights	10,000 00	Dept. 2	298 25
Dept. 1	156 04		
Dept. 3	559 68		
Dept. 4	852 98		
General Expense	1,248 80		
	$31,850 00		$31,850 00

When inventory is taken, the earnings of each department can be ascertained by crediting each department account with the departmental inventory. The department accounts will then show as follows:

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DEPARTMENT No. ....

Dr.		Cr.	
Inv. Jan. 1st	$ 555 60	Cash Sales	$1,859 50
Purchases	1,680 44	Credit Sales	974 85
Expenses	864 42	Inv. June 1st	780 50
Balance—Gross Profits	514 59		
	$3,614 85		$3,614 85

We have referred to the "turnover" on which general expense should be pro-rated, and now proceed to illustrate same:

Inventory, Jan. 1st	$ 555 60	
Purchases	1,680 24	
Expenses	864 42	
	$3,100 26	
Less Inv. June 1st	780 50	
Turnover	$2,319 76	Sold for $2,834 35.

The percentage of general or administrative expense, therefore, would be calculated on the total turnover of the four departments, after which the amounts to be charged against each department could be calculated in the usual way, the balance of the department accounts then showing net profit.

Another method of taking care of customers' accounts, if they are not very numerous, is as follows: Obtain from a manufacturing stationer a sufficient number of boxes made to accommodate your bills. Place the duplicate bills in these boxes (which should be marked outside with the name of the customer and kept in alphabetical order) and place above them a form of statement, which should also be in duplicate, with carbon sheet between. On this statement enter date and amount of each bill as deposited in the boxes. At the end of the month go through the boxes, foot the statements, leave the duplicates in the boxes, and mail the originals to the customers with request for payment. Cash payments should be entered on these statements from the cash book, and when bills are paid, the papers relating to the accounts should be taken out of the boxes so that they can be used for other customers.

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PART VIII.

Pay-Roll Systems.

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Pay-Roll Systems.

Many different methods of arranging pay rolls have been devised with a view both of saving clerical work and obtaining a check on the accuracy of the pay roll.

Pay rolls are frequently complicated by the employes obtaining advances on their pay, and being charged with goods or supplies. In the days when book-keepers transferred everything into the journal prior to posting to the ledger, they also kept their pay roll accounts in the lengthiest and most roundabout way possible. From the pay roll they copied all the names of the employes into the journal, and having opened an individual account with each employe in the ledger, they proceeded to post to those accounts from the journal. Now any proper system used will provide for but two postings to ledger accounts, the charge of the total to ledger account and the credit to cash. The pay roll book itself is so arranged with a system of short leaves following the names pages (see illustrations) that

Weekly Pay Roll			January								February							
Name	Salary	Clk No.	5"		12"		19"		26"		2"		9"		16"		23"	
W Williams	15 00	1	15	00	14	60	15		12	10	15	00	15	00				
D Kerner	6 00	2	6	00	6	00	6	00	6	00								
F W Cline	20 00	3	20	00	17	50	20		20									
J Arnold	25 00	4	22	75	25		16		25									
		5																
		6																
		7																
		8																
		9																
		10																
Weekly Totals			507	60	503	20	492	00	501	60								

the names of the employes need be written only once in thirteen weeks, perhaps, instead of every week. Where the employes are charged with goods and cash advances, a combined pay roll and ledger is used, which is especially adapted to the requirements of plantations and lumber camps, where a general store is maintained and employes are paid by tickets representing the value of wages earned, which they can either exchange for cash at the company's office or for goods at the company's store.

Another labor-saving method is illustrated below, where the pay roll clerk simply takes account of time lost instead of time working, so that if a

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man works six full days with the exception of two hours on one day, it is only necessary to write the figure 2 on the pay roll instead of the figures 10 for five days in the week and the figure 8 on the sixth day when the time was lost. By the ordinary method twelve figures would be written in the pay roll book; by this method only one figure is written, a saving of eleven figures. If it is necessary to keep track of the time of two hundred employes, it is easy to see what a saving of time this method affords.

Each employe has a number and carries a check with the corresponding number. He is required to deposit the same in the morning before going to his post of duty in a box attached to the check-board, which is numbered from one up according to the number of employes. After the

FROM...May 8th..... To...May 13th..... 1899...

NAME	M 8	T 9	W 10	T 11	F 12	S 13	Hours	Price	Amount	Remarks
F. Jones	10	0	10	10	10	10	5 0	6	3 00	
	10	10	10	10	10	2	5 2	5	2 80	

FROM...May 8..... To...May 13..... 1899...

NAME	M 8	T 9	W 10	T 11	F 12	S 13	Hours	Price	Amount	Remarks
F. Jones		0					5 0	6	3 00	
J. Smith						2	5 2	5	2 80	

hour of commencement the time-keeper distributes these checks on the check-board and takes a record of all checks not on the board, which represents the employes not present. The board is then kept in the time-keeper's office until the noon hour for closing, when the same operations are gone through as in the morning. If for any reason an employe desires to leave before the regular time for closing he procures an order for his check from his respective foreman, stating the number of hours he has worked up to the time of his departure. This order is presented to the time-keeper, who delivers to the employe his check and makes a record of his time on the list above referred to. Each foreman is required to make a daily report of his employes who are absent, and this report is checked against the time-keeper's record. This forms a safeguard for errors. This forms a complete record of employes not present and the balance of the employes on your pay-roll must necessarily be present.

You are now ready to post to your time-book and here comes the economical feature of this system. You simply post the check numbers that were absent; those present taking care of themselves on the books, as you will discover later. In order that you may fully understand how this is done, I will give below an illustration of the method generally used by time-keepers, and one to the system I refer to.

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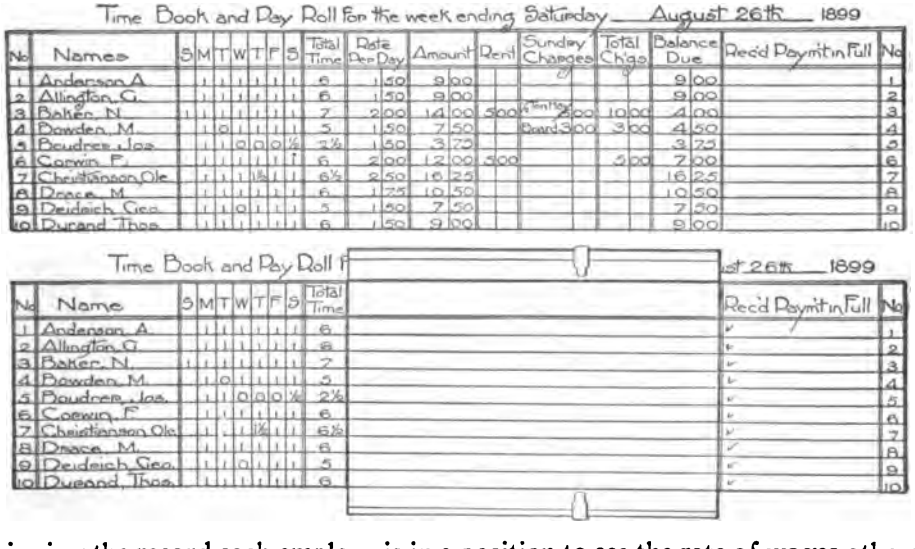
For illustration, if Mr. Jones in the above sketch, works ten hours the 8th, 10th, 11th, 12th and 13th, you will simply leave the spaces under those dates blank, and if on the 9th he was not working all day, you will place a cipher under that date. This would show that he worked 50 hours for the week ending May 13th.

The next man on the pay-roll, J. Smith, works full time every day except the 13th, on which date he labors two hours. You enter the two hours under that date and leave the balance of the week blank; this shows a total for him for the week ending May 13th of 52 hours, and so on through the pay-roll.

If there is piece-work to keep account of, this can be done by using the card system. Each person's account is kept on a card large enough to take in a pay-day. Each card shall contain the name and check number of the person for whom the account is kept; this should be placed at the top of the card. The balance can be ruled or printed to meet the requirements of any business. These cards are filed numerically in a box or drawer suitable for the purpose, always keeping your live accounts only in this drawer. The total of each card is posted to the time-book every pay-day; the cards are then filed away for further reference, and new ones started for the ensuing pay-day.

Many pay roll books or sheets are arranged for signatures of employes, acknowledging receipt of wages paid. The disadvantage of this is that on



Time Book and Pay Roll for the week ending Saturday August 26th 1899

No	Names	S	M	T	W	T	F	S	Total Time	Rate Per Day	Amount	Rent	Sundry Charges	Total Chgs	Balance Due	Rec'd Pay'mt in Full	No
1	Anderson A		1	1	1	1	1	1	6	1 50	9 00				9 00		1
2	Allington G		1	1	1	1	1	1	6	1 50	9 00				9 00		2
3	Baker N	1	1	1	1	1	1	1	7	2 00	14 00	500	Tent 50 Board 3 00	10 00	4 00		3
4	Bowden M		1	0	1	1	1	1	5	1 50	7 50		Board 3 00	3 00	4 50		4
5	Boudree Jos		1	1	0	0	0	½	2½	1 50	3 75				3 75		5
6	Corwin F		1	1	1	1	1	1	6	2 00	12 00	500		5 00	7 00		6
7	Christianson Ole		1	1	1	1	1	½	6½	2 50	16 25				16 25		7
8	Deece M		1	1	1	1	1	1	6	1 75	10 50				10 50		8
9	Deidrich Geo		1	1	0	1	1	1	5	1 50	7 50				7 50		9
10	Durand Thos		1	1	1	1	1	1	6	1 50	9 00				9 00		10

Time Book and Pay Roll F ... ust 26th 1899

No	Name	S	M	T	W	T	F	S	Total Time	Rec'd Pay'mt in Full	No
1	Anderson A		1	1	1	1	1	1	6	✓	1
2	Allington G		1	1	1	1	1	1	6	"	2
3	Baker N	1	1	1	1	1	1	1	7	"	3
4	Bowden M		1	0	1	1	1	1	5	"	4
5	Boudree Jos		1	1	0	0	0	½	2½	"	5
6	Corwin F		1	1	1	1	1	1	6	"	6
7	Christianson Ole		1	1	1	1	1	½	6½	"	7
8	Deece M		1	1	1	1	1	1	6	✓	8
9	Deidrich Geo		1	1	0	1	1	1	5	"	9
10	Durand Thos		1	1	1	1	1	1	6	"	10

signing the record each employe is in a position to see the rate of wages others are receiving, and this is frequently undesirable. While devices have been invented for the purpose of hiding all other entries on the pay roll except that of the employe signing it (see illustration), we think the best plan is to issue

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tickets to each employe, the tickets stating the amount of wages due and the instruction that on receipting same and presenting it to the cashier the amount will be paid. These receipts can then be filed away as vouchers or pasted on the pay roll book or sheet.

PAY ROLL SYSTEM FOR HARDWARE MANUFACTURING COMPANY.

The following method of handling the labor account of a large manufacturing concern, will perhaps be of interest

The company is engaged in the manufacture of builders' hardware and employs about 300 men; the labor is subdivided into departments, beginning at the pattern department, and ending with the packing and shipping department, each department having a foreman, who, in addition to their other duties, keep the time of the men in their respective departments. The fore-

IRON FOUNDRY

Roanoke Va. Mch 13 - 1899

Time Report for John Smith

with The Virginia Hardware Mfg Co.

Items	3/12	3/14	3/15
Time	10	10	9
840 Cups & Shells 1Bs	87	20	40
347 Latch & Key Bolts "			
32 Catches "			
18 Pully Frames "			
8647½ Fronts & Strikes "			
" Levers & Stops "			
880 Escutcheons "			

D Dussing Foreman

man reports the time of them to the time-keeper twice a week, Thursdays and Saturdays, on slips specially ruled for this purpose (see form No. 1). These slips are written up by the time-keeper on a specially ruled book (see form No. 2), the letters D and J after the names of the workmen indicate whether the work is day or job.

IRON FOUNDRY Week ending Mch 18/99

Names	Prices	M	T	W	T	F	S	Total	Amt
John Smith		10	10	9	10	10	10		
840 Cups & Shells	145	87	20	40	10	47		316	458
347 Latch & K Bolts	140	32					48	80	126
32 Catches	135	10					62	72	105
18 Pully Frames	130		64	8				92	138
8647½ Fronts & Strks	145		40	72	20			132	251
" Levers & Stops	147			32			46	78	115
880 Escutcheons	162			40				40	65
									1238
Dan Davis D	25	10	10	4	×	4	10	38	
J				5	10	6			
347 Shells & Caps	160			60	70	90		345	369
John Thompson D	20	10	10	×	4	10	8	42	

After the week's work is all entered up, prices put in, extensions and footings made, etc., the totals are entered in the pay roll ledger (see form No. 3) with the parties' names and number of hours made. The job hours are entered in red ink and the day hours in black ink, thus readily showing the kind of work each man has done at a glance.

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After the pay roll is completed, a recapitulation is made showing the amount of day and job work of each department, which should tally with the

VIRGINIA HARDWARE MFG Cos. Pay Roll for week ending Mch. 18 - 190.

Names	M	T	W	T	F	S	Job Hours	Day Hours	Rate	Amt Day work	Amt. Job work	Total	Deductions	Net Amt due

total footings of the pay roll, these summaries are entered in the back of the pay roll book in a condensed form (see form No. 5); from this, very useful

Summary of Pay Rolls From _____ to _____

1899	Pattern Dept		Iron Foundry		Brass Foundry		Pol. & Buffg.		Machine Dep.		Assembling		Total		Per cent	
Week ending	Day	Job	Day	Job	Day	Job	Day	Job	Day	Job	Day	Job	Day	Job	Day	Job

and important information is gathered. The comparative cost of each department is readily seen, the percentage of day and job work is shown, the latter information being indispensable in figuring the cost on the product of the plant.

The company also runs a commissary department in connection with its business. Commissary checks are issued to the employes against their time, the checks used are small pieces of cardboard 3x5 inches (see form No. 4), which are numbered consecutively. When a check is issued it is charged on a memorandum book and posted from there to the pay roll ledger in the column marked "Deductions," other items advanced to help, such as cash, coal, etc., are also entered in this column. These several amounts deducted from the amount earned gives the net amount due.

After the pay roll is closed, the time-keeper next makes out a ticket for each man, showing the amount earned, deductions made, if any, and the net amount due him for the week. These tickets are put up in envelopes and turned over to the foreman to be distributed by them to the men in their departments.

The next step is to prepare for paying out the money. For this purpose they use manilla coin bags 3x4½ inches in size.

The name and amount is first plainly written on the upper end of the bag, the money is then counted out by the time-keeper and passed over with the coin bag to an assistant, who recounts it, puts it into the coin bag, and seals it up. After thus putting up the money, these bags are laid out on some

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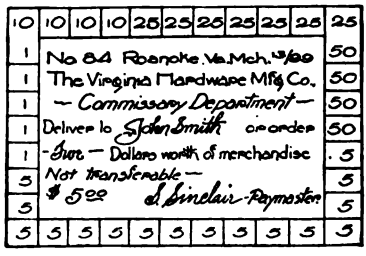
suitable place in alphabetical order. When the hour for paying off arrives, the men assemble at the pay window of the time-keeper's office and present their tickets for payment. After comparison with the coin bag as to name and amount and getting it properly receipted, the money is passed out to the owner.



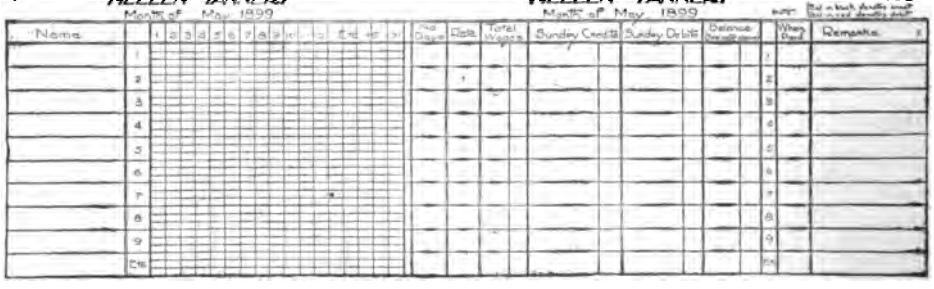
After all of these tickets have been cashed, they are filed away in some convenient place for reference and as vouchers for the money paid out for labor.

By this method the men are paid off every Saturday evening, one week's wages being kept behind, as it takes this length of time to make up the pay roll.

The actual time consumed in paying off the men being about thirty minutes, this system was practically devised by the writer and used for several years with satisfactory results.—*S. S. Burch.*

PAY ROLL SYSTEM FOR A TANNERY.

It would be impractical for large concerns, having many employes to keep the account of every employe on the regular double entry ledger. At the same time a system must be kept by which any possible errors in employes can be avoided. The following is a system which is now being used by a large number of manufacturers, and although one may call it double entry, it is auxilliary to the regular set of double entry books. The system is comprised of only two extra or special books. One is the employes' time ledger, and the other is the coupon register. I will describe the former as follows: The pages are numbered in folio, that is, there is a right hand page and a left hand page for every twenty-five employes' accounts. (See cut No. 1.) At



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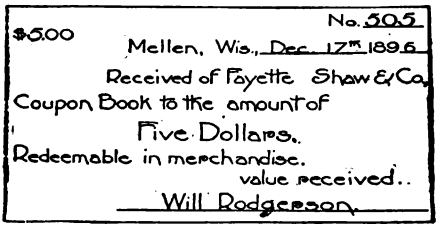
the left of the left hand pages are written the employes' names, usually in alphabetical order. The space to be given for each name should be about nine-sixteenths of an inch. A page ten by eighteen inches should hold twenty-five names or accounts. (The names are rewritten and new accounts opened with each employe every month.) The balance of the left hand page, to the right of the names, is ruled off into thirty-one spaces or columns, a column for each day of the month. Then each employe's space is subdivided into three spaces by horizontal lines of a different color. Into the top the time is entered. Into the two lower spaces the charges are entered.

Whenever a company store is operated in connection with other business, a coupon system is a simple method of charging employes up with what they may purchase in any one month at the store. Instead of charging up the employes' accounts with value of articles purchased, coupon books are issued to the employes in sums ranging from $2 to $20. These coupon books contain slips of different denominations, which are good in trade only at the store. In each book is also a receipt which is torn out when book is issued, and the receipt is signed by the employe to whom the book is issued. (See


No. 505
$5.00 Mellen, Wis., Dec. 17th 1896
Received of Fayette Shaw & Co.
Coupon Book to the amount of
Five Dollars.
Redeemable in merchandise.
value received.
Will Rodgerson.

form of receipt.) These receipts are then entered into the coupon registered, ruled off as per cut herewith. From the coupon register the amount of coupons are posted to the employes' accounts in the time ledger, in red ink, to distinguish the coupon charges from other charges. After posting, check over all entries. In the journal, make an entry as follows:

$274.00; Pay roll, Dr.,
To Coupon account, $274.00
(Coupons issued 5-4-'99.)

Expense, Dr.	$3,547 89	
Salaries, Dr.	465 29	
Tanning Labor, Dr.	7,326 67	
Bark Labor, Dr.	422 06	
To Pay Roll account, Cr.		$11,761 91

Suppose that you have paid out on the same date, in cash, to different employes, amounts aggregating $93. Charge pay roll, in cash book, with that amount, and post to general ledger. Also enter on cash book, in the explanation column, the names of the employes who drew the cash, and the amounts. Post these from cash book to time ledger, in the column which is

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same date as entry on cash book. All cash charges on time ledger should be preceded by the letter C, and all journal charges by the letter J. The total charges in any one column in time ledger, on any given day, should correspond with total charged same day to pay roll in the cash book and journal.

300. COUPON REGISTER-MELLEN TANNERY

MONTH OF May 19

Date	No of Book	Folio	To whom charged	Labor Account	Bank Account	Expense Account	Sundry Accounts Folio	Account	Ammount	Remarks

The first money column of the right hand page is for wages. The second column is for sundry credits, or for balances carried forward from previous month. Into the third column are extended the total charges for the month. Into the fourth money column is carried the balance due each employe at end of month, after deducting all charges. The next column shows when balance was paid. If paid on the regular pay day, the initials "P. D." are inserted. If paid any other time, insert the date. The last column is for remarks, and into which should be noted how balance was disposed of . After the time is all entered on time ledger, and figured and carried out, then all charges should be extended into the charge column. Then carry out the balances into the balance column. Then add up the columns on the right hand page and prove as follows: Add the first column to the second column, then subtract the third column, and the remainder should correspond with the last or balance column. Then the footings of all the pages of the same month are grouped together on one page and added up, and proved again, as above.

The aggregate footings of the first column of any month constitute the pay roll for the month, and the footings of the last columns constitute the balance due employes on account of pay roll, and should correspond with the balance of pay roll account in the double-entry ledger. After pay roll is all complete divide up the different labor items, and make a journal entry, say as above.

* * *

PIECE WORK.

Where a piece work system is adopted, it is necessary to pay the strictest attention to the question of the output, as the workman is liable to sacrifice skill and careful attention to his work for rapidity of production in order to complete as large a number of articles as possible and so increase the amount of his remuneration. Those engaged on piece work are also liable to be careless with machinery, tools and material supplied, sacrificing everything to the end of securing a large output. Labor unions do not, as a rule, look upon piece work with favor, because the employer bases his

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rate for piece work on the amount of work performed by the strongest and most expert workman, thus rendering it impossible for the ordinary workman to gain a reasonable living.

Where both piece work and day work are employed in the one establishment, it is useful to keep a record which shall allow of a comparison

PIECE WORK RECORD

				Piece Work		Day Work				
Date	Name of Workman	Article		Cost per Article	Total Cost	Hrs.	Date	Amt.	Percentage Piece Work or Day Work	Remarks
		Description	No. made							

between the two methods, so that it can always be ascertained which is the most profitable method of manufacture of any given article.

* * *

COMBINED PAY ROLL AND LEDGER.

Accounts with laborers form an important part of any system of accounting dealing with plantations. A combined pay roll and ledger should be adopted which will save all the trouble of keeping individual accounts with laborers, and at the same time prevent the writing of names oftener than once in about thirteen weeks instead of every week, as is

HANDS PAY ROLL & LEDGER

Name	No	Bal. forw'd.	Date	Debits			Date	Credits			Bal. forw'd
				Cash	Mdse	Total		Returns &c	Wages	Total	

customary on most pay rolls. A combined book of this kind is arranged on the tabular system as per the following illustration: The laborer is given by the superintendent a ticket each day for value of work done, and this ticket he can exchange for cash at the company's office, or for merchandise at the company's store. The book-keeper posts the debits from these tickets and files them away for reference. The superintendent keeps an account of all tickets issued and at the end of the week makes a return of the total wages earned by each man, duly O. K.'d, from which the book-keeper posts the wages credited to the pay roll and ledger.

The books should be ruled so that two weeks can go on left-hand pages and three weeks on right-hand pages. Then insert as many cut, or narrow leaves (without name and number columns) as may be considered practical, the books thus running for as many weeks as desired without rewriting the names.

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TIME RECORD SYSTEM FOR A FACTORY.

Each workman is furnished with a cost card (Fig. 3), on which he records particulars of time consumed and material used on the contract, or job, on which he is engaged. When the job is completed this card is turned in to the cost clerk, who figures out on it the cost of material, labor

(COST CARD FIG. 3) THE AMERICAN MANUFACTURING CO.

Name of employe..... No.....

Shop Order	Material out	Time	Date finished	Quantity	Dept.	Material used	Prime cost	Labor	Sundries	Total Cost

and sundries and enters it on the Cost Record of Summary (Fig. 4). A separate page is allotted to each contract or job, and the total cost of same ascertained. This amount is then posted to the contract account in the ledger, which is credited with contract price, the difference being the

FIG. 4 COST SUMMARY

Date		Cost Card No.	Name of Workman	Dept.	Quantity	Prime Cost		Labor		Sundries		Folio	Total Cost	

amount of either loss or gain. Where certain staple articles are manufactured a comparative statement of cost of manufacture should be maintained, in order to ascertain that such costs are not excessive or exceptional in any way.

In Figure 5 we show a form of Pay Roll Book, the particulars of which are obtained from the Time Recorder. If the Pay Roll Book is com-

FIG. 5 PAY ROLL BOOK

Name		M	T	W	Th	F	S	Total Time	Rate	Amount		Advanced		Balance due			When Paid
	1															1	
	2															2	
	3															3	
	4															4	
	5															5	

pared with the workmen's cost cards a very good check is obtained on the total time reported.

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Some establishments still have their employes sign the pay roll, but where the hands are very numerous this is found laborious and inconvenient, besides exposing to the view of the person signing the amounts paid to others.

(FIG. 6) WAGE VOUCHER

THE AMERICAN MANUFACTURING CO.

CASHIER: 1900

Pay to ..... the sum

of ..... in payment of wages due as follows:

Monday ..... hours
Tuesday ..... "
Wednesday ..... "
Thursday ..... "
Friday ..... "
Saturday ..... "
Total ..... hours

..... Supt

RECEIVED of The American Manufacturing Co. the above amount in full of all claims this ..... day of 1900

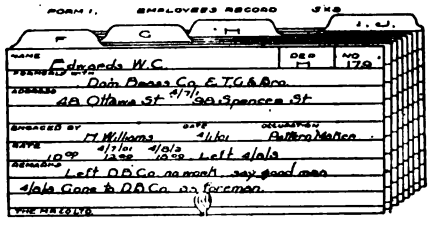
(Signature) .....

Fig. 6 shows a very good form of combined wages card and voucher, which can be used with advantage.

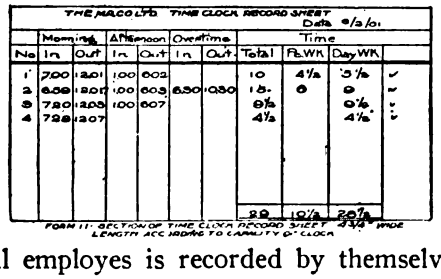
* * *

FACTORY TIME-KEEPING.

Where an employe is engaged an employes' record card (Form I.) is made out and filed away in an alphabetical index, he being instructed to



notify the time clerk should he change his address. When any change occurs in his relation to the company it is noted on this card. In the case of a former employe applying for a re-engagement, the information thus recorded will often be found of great value. In an emergency it is also frequently valuable to have easy access to the addresses of employes.



The time of all employes is recorded by themselves on entering and leaving the factory. For this purpose two register time clocks are provided,

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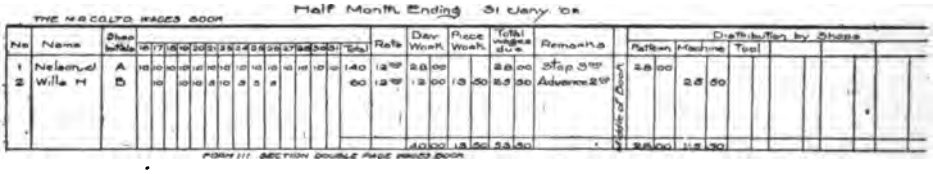
one for employes who are paid wages, and one for all others. On removing the record sheets (Form II.) from the clocks in the morning, that for the salaried employes is simply placed on file for information of those to whom such employes are responsible.

On the record sheet from the other clock, the full amount of time as shown by the record is extended into the column headed total time. The amount of such time as has been spent on piece-work being ascertained from the factory clerk (as described later) is entered in the piece-work column,


THE HASCOLTD WAGES BOOK

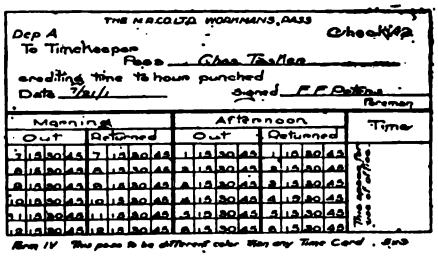
Half Month Ending 31 January 08

No	Name	Sheet letter	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	Total	Rate	Day Work	Piece Work	Total wages due	Remarks
1	Nelson J	A	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	140	12½	28 00		28 00	Stop 3½
2	Wills H	B		10		10	10	3	10	3	5	8									60	12½	12 00	13 50	25 50	Advance 2½
																							40 00	13 50	53 50	

Distribution by Sheets			
	Pattern	Machine	Tool
	28 00		
		25 50	
	28 00	25 50	

FORM III. SECTION DOUBLE PAGE WAGES BOOK

and the difference between the two extended into the column for day work. The time in this column is entered into the wages book (Form III.) each day, it having first been checked with the factory clerk's day-work tickets and daily time sheet in order to ascertain that all time credited to the workman has been charged out against some factory order. The total and piece-work time being added, the difference should, of course, correspond with the total of the outside or day-work column. If a workman is allowed to go out on his own business during working hours he is given a pass (Form IV.) by his foreman, indicating the time he stopped work. The door being


THE HASCOLTD WORKMANS PASS

Dep A Check 42

To Timekeeper

Pass Glass Tooling

crediting time to hours punched

Date 7th/1 Signed F F Outhwaite Foreman

Morning								Afternoon								Time
Out				Returned				Out				Returned				
7	15	30	45	7	15	30	45	1	15	30	45	1	15	30	45	
8	15	30	45	8	15	30	45	2	15	30	45	2	15	30	45	
9	15	30	45	9	15	30	45	3	15	30	45	3	15	30	45	
10	15	30	45	10	15	30	45	4	15	30	45	4	15	30	45	
11	15	30	45	11	15	30	45	5	15	30	45	5	15	30	45	
12	15	30	45	12	15	30	45	6	15	30	45	6	15	30	45	

This space for time of office

Form IV This pass to be different color from any Time Card . &c.

so arranged that he has to pass the time-keeper's desk to leave the building, he gives his pass to the time-keeper and upon his return reports himself as he passes in. The time he has been out is noted on his pass, and is deducted from the time passed to his credit through the wages book for that day. If he goes out on the firm's business he is given an outward time card indicating the time he leaves the shop, and having the number of the order upon which his work outside is required. This he leaves with the time-keeper. On his return he receives this card, which he returns to his foreman in the usual course. The time-keeper thus has either a pass or an outwork time

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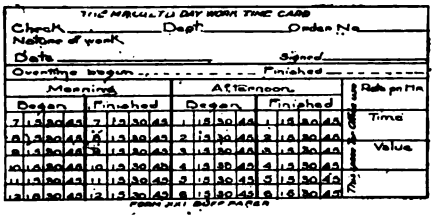
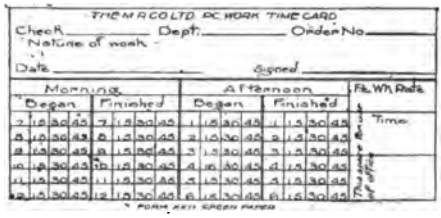
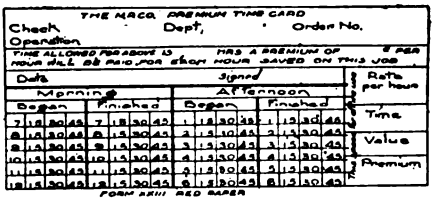
card in his possession for each workman during absence from the shop. It will be seen that every alternate page of the wages book is a flyleaf; this enables one writing of workmen's names to suffice for two half months.

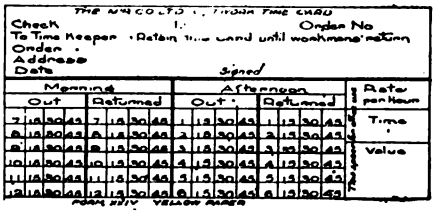
The keystone of factory accounting is a rigid adherence to the rule that no work shall be put in hand, expenditure incurred or goods or material delivered without written authority emanating from the office, and that all papers and records referring to or recording such work, expenditure, or delivery, must bear the number of the order authoizing the same.

On receipt of card from factory clerk and material from stores, the foreman of the department puts the order in hand at once. He issues a time









card (Form XXI. to XXIV.) to the workman to whom he allots the job, first noting thereon the order number and the date. With his private punch he indicates the hour at which work is begun on the order in question. When the workman finishes the operation, or is put upon another job, he returns the card to the foreman. The latter punches the time at which work was stopped on that particular order. The only writing the workman is called upon to do, is to fill in the space headed "Nature of Work," and sign his name. In a great many instances it is not necessary to specify nature of work done, as, particularly in the manufacture of stock, the workman's name is sufficient to indicate to the office staff the nature of the work done by him.

The time cards in possession of the foreman are of four kinds, each of a distinctive color, namely, day-work, piece-work, premium-work, and out out-work. The ruling is practically the same on all cards, and as far as both workman and foreman are concerned, no more clerical work is necessitated by one than the other.

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On the premium time card the foreman fills in the time allowed, and with that exception the cards are treated exactly the same. It will be seen that all responsibility for the correctness of his time card is off the workman, and put where it properly belongs—on the foreman of the department. The latter is responsible for the time card bearing the correct number, and showing the actual amount of time expended upon that number. Under no circumstances is the workman allowed to begin another job until he has returned to the foreman the card previously used by him and obtained another with his starting time for that job punched upon it. If a man is taken off a job and goes back again to work on the same, he gets a new card each time.

The back of the cards may be used for any remarks either the workman or foreman may wish to put on record concerning either the work done or time expended.

As regards the premium time card, the system of paying wages commonly called the "premium plan," may require a little explanation. To those interested in the question, and desiring to study the plan in the light of actual recorded results, I would recommend a number of articles under the heading "Premium Plan," which appeared in the American Machinist at different times during the past two years. Briefly put the idea of the plan is, after ascertaining from past records how long it has taken to produce a given article, or complete a given operation, to offer the workman a premium or additional wage upon such time as he can save on the same work. If past records show that certain work has been repeatedly done in ten hours, it is clear that if the workman can be induced to do the same work, or produce the same quantity in say, nine hours, a saving has been effected, and the idea is to allow the workman to share in that saving. Suppose the employe is to be paid at the rate of 20 cents per hour, if he is offered, say one-third of that amount for each hour saved, he will see that his employer's interests and his own are identical. It is really offering the workman that most powerful of all inducements to increase his output, namely, self-interest. Those who have had long experience with this plan claim it is the only system whereby increased wages to the workman mean reduced costs to the employer.

From time to time during the day the time checks returned to the foreman are collected by the factory clerk. From the time punched he calculates the time expended and, filling in the workman's rate per hour, extends it into space for value. On piece-work cards he simply marks the time expended and does not extend any value. The cards are kept sorted by workman's number, and entered on the daily time sheets (Form XXV.). These sheets are ruled into convenient spaces to hold for each man a record

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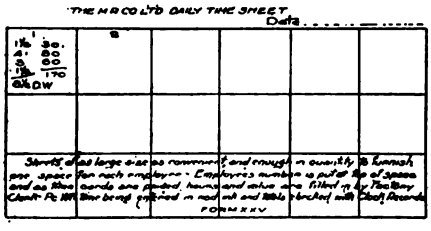
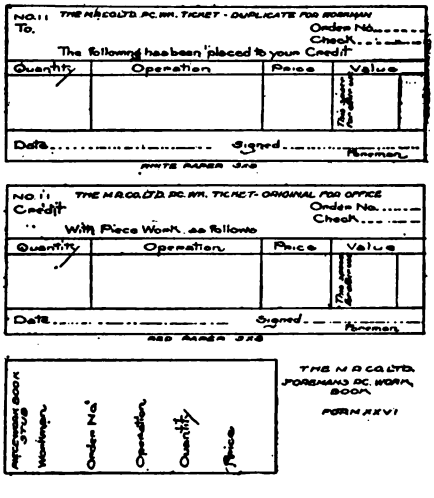
of his time as shown by his time cards, and the value of such portion of time as was expended on day-work. The piece-work time being entered in the same space in red ink, it is a simple matter to keep the two from con-


THE N B CO LTD DAILY TIME SHEET.
Date.....
FORM XXV

fusion. The last cards for the day are taken up by the foreman at 15 minutes before closing time, and by him punched and sent to the factory clerk.

The first thing in the morning the factory clerk takes the time cards and time sheets, and gives the time-keeper the amount of piece-work time for each workman. This is entered upon the clock record, and deducted from the total time as previously described. All day-work credited to any employe has now been accounted for under some factory order number.

As regards piece-work, except in very large shops, it is quite practicable to pay a workman for all piece-work done up to pay day, instead of following the usual plan of paying him a certain proportion (usually two-thirds of his day-work rate), and carrying the balance over to next pay. Each foreman is supplied with a piece-work book (Form XXVI.). On the



stub he takes a memo for his own information. Both original and duplicate in this book are perforated, and as the work is inspected and passed as correct, the foreman removes them both from his book, and gives the duplicate

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to the workman. The original, which is of a different color, goes to the office and is extended and posted to the cost sheet. These piece-work slips are kept sorted by workman's number until after the next pay day, when they are made up and posted to the credit of the workman; they are then sorted by order number and are filed away with other papers connected with the same order. It will be noted that while original and duplicate contain the same information, the printed matter is entirely different, so by no possible means can the duplicate be used to draw pay the second time, for work done.

At first sight it would appear as though the system of a different time card for each job would result in so many papers that the records would be too bulky to be quickly and accurately handled. If it were necessary to leave the collecting, sorting, pricing, and extending of all time cards until the close of the day it might be found so. Collecting them frequently during the day and keeping them sorted by workman's number and priced and extended, it should only take a very short time to check them with the clock records the next morning. This having been done, the tickets should be sorted according to order number, and it will then be found that they can be posted to the cost sheets in less time, and much more accurately than if several numbers were on one card. Besides putting the responsibility for the proper order number and correct time upon the foreman, the system of a single ticket for each order takes from the workman all opportunity to either "cook" his time, or enter as day-work time which he has actually spent upon piece-work, so getting paid twice for his labor.

* * *

PAY ROLL SYSTEM FOR A LUMBER CORPORATION.

The laborers are employed in different ways, sometimes spending part of a day in one department and the remainder in another. They also obtain

No. 1 Month Mch. 20 1900
Name W. Morris Mark X

Price	Branch No.							Section No.				
40 ¢	½	1	2	3	4	5	6	7	8	9	1	0
50 ¢	½	1	2	3	4	5	6	7	8	9	1	0

No. 1 Month March 1900.
Name W. Morris
The figures punched show you the number of trees you have cut to-day
Counted by H. Jones Mark X

Price	Branch No. 12							Section No. 84				
40 ¢	½	1	2	3	4	5	6	7	8	9	1	0
50 ¢	½	1	2	3	4	5	6	7	8	9	1	0

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advances of cash, and purchase merchandise at the camp store. It is necessary, therefore, to have a special pay roll book, or, as it is called, a "Hands Ledger," an illustration of which will be found under the heading of Pay Roll. Each workman is furnished with duplicate tickets—one for each department in which he works. On this ticket the foreman punches

No. 1 Name C. Green

Mr. W. Williams At. M. L.

Month. March 15-1900

RATE PER DAY					DAY				
$0.90	$1.00	$1.15	$1.25	$1.50	1	3/4	1/2	1/2	1/4

No. 1 Name. C. Green

The punch in this Ticket shows you the amount of time you have made today with.

Mr. W. Williams At M. L.

Month Mar. 15-1900

RATE PER DAY					DAY				
$0.90	$1.00	$1.15	$1.25	$1.50	1	3/4	1/2	1/2	1/4

the time occupied on the job, so that the laborer is always in a position to check up the settlement of his account by the time-keeper. We append samples of these duplicate tickets.

The originals of these tickets go to the time-keeper, from which he makes up his records.

* * *

PAY ROLL SYSTEM FOR A MINING CORPORATION.

The company employs about 1,200 to 1,500 natives and 60 to 70 Americans, the latter being foremen, mechanics, clerks and heads of departments. The pay roll accounts for the natives are kept by the Tienda de Raya (meaning a store where merchandise is advanced against time tickets). The Tienda de Raya conducts also what is called a Prestimo office (cashier's or pay office), where labor time-keepers and Prestimo cashier are employed.

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It also conducts several branch stores which, however, are cash stores. All merchandise invoices and freights for the Tienda are charged to it direct when paid, as also all cash advanced it for use in the Prestimo office. At the end of the quarter the Tienda de Raya is charged with administration expenses and accrued profits. The Tienda schedules its pay rolls in what might be termed a distribution journal, showing amount of each class of labor chargeable for the month to each mine, each department or each account. This book when written up at close of month is turned in to the general office, when Tienda de Raya receives credit for total amount of pay rolls, also for the personal accounts of American employes.

At the close of the month a pay roll is made up in the general office for all American and salaried employes. There being no banking facilities whatever here, these employes leave the balance of their earnings with the company, each one has an account and is furnished with a pass book. Employes having balances are permitted to draw cash at will during the month, and all are allowed store accounts. These cash items (including checks and drafts) are debited in detail during the month, and at the close of the month the various acounts are charged with their respective store accounts and credited with salaries.

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PART IX.

The Voucher System.

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The Voucher System.

A SYMPOSIUM FROM "THE BOOK-KEEPER."

THE Voucher System (so called) consists of a record of accounts payable, arranged ith columns for the distribution of purchases to their proper departments; a record of the payment of such accounts; and a form of voucher which accompanies the payment.

The Voucher Record (or record of accounts payable) is not used in all respects in the same way as a purchase record, for the reason that whereas a purchase record is usually devoted to a record of goods purchased, the voucher record covers not only goods purchased but expenditures of whatever nature.

In the cash book a column is provided on the credit side for "Vouchers Payable," and the payments entered in the cash book are posted to the voucher record, the check number also being given. It is one of the essentials of this system that all payments, no matter how small, be paid by check.

An account called "Unpaid Vouchers' account" is opened in the general ledger, to which the total of vouchers issued, as per the voucher record, is posted at the close of each month. The total of the "Vouchers Payable" account in the cash book is posted at the close of each month to the debit of this account, the balance showing the amount of vouchers outstanding and unpaid.

For every entry in the voucher record, or series of entries for one concern, a numbered voucher is made out, and these vouchers are kept in a file until taken out for payment. After payment the voucher can be filed away in alphabetical or numerical order, whichever method may be found most convenient to the business. The bills referred to on the voucher should be attached to same prior to filing.

When vouchers are filed numerically, the following is an excellent plan for keeping tracks of same and affording a ready reference. File the vouchers in packages each month; use an ordinary index, but have it ruled with columns for each month of sufficient width to accommodate the voucher numbers; then index all the vouchers filed away each month, thus: J. O. Johnson & Company would be indexed Voucher No. 163 in April; 462 in June; 520 in July, etc.

The voucher itself should be arranged so that it bears on its face the following endorsements:

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O. K. of shipping department that goods have been duly received.

O. K. of purchase agent that prices and terms are correct.

O. K. of book-keeper that extensions are correct.

O. K. of Auditor.

And finally O. K. of President or Secretary for payment.

While this involves a certain amount of extra work, the system furnishes a complete check upon the accounts payable of a business, and if carried out properly, practically renders it impossible for anything to be paid out for goods which have not been received or paid twice or paid without authority.

A great many Corporations now combine voucher and check in the same form by adding the following paragraph:

When this voucher is signed by the Treasurer, and countersigned by the President of the....., and receipted by the Payee, it becomes a draft payable at the First National Bank of.....

(Sig. of President.) (Sig. of Treasurer.)

When the voucher register is properly arranged with distribution columns, the distribution on the back of the voucher is unnecessary.

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Vouchers and Their Uses.

THE greatest importance attaches itself to any system of book-keeping which will, in itself, add to the security of business, prevent loss by error or dishonesty, and minimize the opportunities for mistakes. Any receipt for moneys paid which it filed for future reference is a voucher; but the adaptation of the term by business houses of the present time to a special character of receipt, which shall at the same time of acknowledgement of the payment specify the particular purpose for which the money was paid, either with or without the original bills, and which shall be numerically arranged for ready reference, has changed the real meaning of the term, so that it now implies a receipt embodying the above features.

That the voucher system is a benefit to the business man is clearly shown by the fact that it has been adopted by the United States government, by all railroads and express corporations and by thousands of other large corporations and private companies.

The chief use of the voucher is to facilitate the auditing of accounts, and by rendering this task easy and accurate to prevent the falsification of books, either by the dishonesty of the employer or the employe. Its secondary importance is to preserve a file of receipts that may be reverted to at any time after the transaction, to prove payment; and to have them uniform in size, plain, but fully explicit, and so filed that they may be easily found at a moment's notice.

The United States government goes to the extreme in its complicated system of vouchering, but the government is noted for its red tape in all of its departments, consequently a radical departure in its system of payments is not to be looked for.

The government has (in its department) a system of duplicate and triplicate vouchers upon which is enrolled each separate item of the purchase, and all circumstances connected therewith. When ready these vouchers are sent to the firm or individual in whose favor they are made and must be O. K'd, receipted and returned, before any payment is made thereon. Thus the government holds their receipt before payment. A check is sent for these receipted vouchers in due course of time, and a receipt is also required for the check. The original bill, or bills, or supplies represented by the voucher, after being properly attested correct, are attached to the duplicate voucher, and thus permanently filed.

It is manifestly impossible in a limited article upon this subject to take up the many variations in the form and matter used upon vouchers, as they differ, according to the character of the business and the various exigencies of approving and auditing, but in some of its many varied forms the voucher is now in use by most corporations and its mission is rapidly becoming universal, as its advantages make it a business necessity, and outweigh all considerations of extra labor and expense.

In a matter of such universal importance to business interests, it is directly in order (as the system is here to stay) to ask what is the most desirable form of voucher to use, in order that it may answer all purposes

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for which it is designed. That these purposes may be made clear I will define and explain them:

First—A voucher is a receipt for a payment of money.

Second—It is a document designed to show definitely for what purpose such payment is made.

Third—It is made uniform in size and shape so that it may be filed in a manner to make it easily obtainable at a moment's notice.

Fourth—It is consecutively numbered, in order that it may be used to advantage in auditing, and the number of the voucher should invariably precede the entry of payment in the cash book.

Fifth—It should be properly approved for payment by the officers of the corporation or member of the firm designated for this purpose, and in this particular too much care cannot be exercised.

Sixth—It must accord in amount with the invoice, or collection of invoices, or account, which it represents, or if used for purposes of wage or salary, with the items thereon stipulated.

Being thus a definite and absolute receipt, covering a definite and absolute account, it is obvious that a voucher should have neither interlineation or erasures and either of these would invalidate it. If a mistake is made it is just as necessary to void the number and make a new voucher as it would be to void a bank check incorrectly filled out, and write a new one. No business man would think for a moment of making erasures or interlineations upon his bank check. The voided vouchers should be filed numerically with the others.

A voucher should never cover a greater or lesser amount than the amount paid, and should not be used for payments upon account except as a simple receipt. I do not approve of the use of vouchers for this purpose at all. It is better if payments upon account are made to take a simple receipt, and finally, when the last payment is made and the account closed to make a voucher reciting therein the component parts of the account and the various credits as shown from time to time. Thus the voucher becomes in itself a full and final receipt for the account.

The best use of the voucher system which any firm can make is to use it simply to cover payment for accounts due, and bills discounted for cash, which are charged direct to merchandise or accounts payable.

In this case a voucher may recite the various invoices represented therein, but under no circumstances do we consider it necessary to duplicate upon the voucher the various items of the original bills. This seems like much useless work, carries no authenticity with it and affords additional opportunity for error. Some firms check up their monthly accounts payable upon statements sent by their creditors, and, as is shown in Form A, to follow, attach the statement of the person or firm in whose favor the voucher is made to the voucher. Others prefer to destroy or file the statement and to write in the dates and amounts of the various invoices covered by the voucher. Either method is equally correct, but I lean toward the attaching of the checked and O. K'd statement, as it carries the additional evidence of correctness of the voucher furnished by the creditor, and does not require the rechecking of the voucher at some future date to establish its accuracy. Some firms destroy the creditor's statement, but attach a statement of their own,

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fully and carefully filled out. But the good effect of this duplication is somewhat problematical. It cannot by any means carry in itself the weight or authenticity which the original statement does. Besides this it may require re-checking by the receiving firm.

Nine tenths of the firms or corporations using the voucher system at present discount their bills, but there is no good reason why every firm should not add this simple and effective check, guarding payments, assuring proper receipt, and guiding any examination of the books which may become either necessary or desirable.

In lines of business of considerable magnitude, such as railroad companies, express companies and great corporations, where the branches are numerous, and radiate to all points of the compass; where the purchases are made at many different points, and by many different people, while the payments are made from one central point, it may become necessary to have vouchers in duplicate or triplicate, but in any ordinary business this is entirely unnecessary. Whenever a duplicate voucher system is used the original invoices may be attached to the duplicate voucher and if so done should, at all times, remain a part thereof.

The main abuse of the voucher system of the present day is the large amount of useless and unnecessary labor employed, corporations in many cases requiring that every item from the original invoice be entered upon the voucher, deplicating and triplicating, where no necessity exists. Some railroad companies go to the extreme of requiring a separate voucher for each separate invoice, hence firms from whom they purchase 100 bills per month will be required to enter 100 payments to balance them. Such a course is simply idiotic.

It does not seem to me either justifiable or advantageous to make the voucher itself do service as a check, as many railroads do. There can be but one absolute advantage in so doing, and that is the positive certainty of its return to the sender for filing, but as the public is becoming better educated from day to day, in this system, there is hardly less surety of the return of the voucher which is sent accompanied by a check, and that by return mail, than of the one which does check service.

Some of the railroads make the voucher do check service and yet avoid some of the disadvantages of the voucher-check, by using a rubber stamp, which makes the voucher when properly signed a sight draft upon the maker. I herewith give such notice which is used by the Texas and Pacific Railway Company. In the body of the voucher, after the preliminary description, the reading matter is as follows:

....in full from.....furnished during the month of....., 1900,.....as per bills dated as follows.....
.....
.....
.....
attached to the original voucher.

The draft notice is as follows:

> This voucher when properly dated and receipted becomes a sight draft on L. S. Smith, Asst. Treasurer the Texas & Pacific Railway Co., and will be paid on presentation through the National Bank of Commerce in St. Louis, Mo.

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The advantage of making the voucher a draft in place of a check is, that no entry need be made in the cash book, until such draft is presented and paid, and it should always be borne in mind by those using this system that the date of payment is the time of the return of the voucher and not the day upon which it is dated and forwarded.

A careful comparison of the various systems shows that most of them have more minutiae than is necessary. I herewith append a form used by the Heusinger Hardware Co., of San Antonio, Texas (and with some slight

Heusinger Hdw. Co.
San Antonio, Tex.
416 So. Military Plaza.

To. _____ Dr.

San Antonio Tex _____ 1900

Herewith, we take pleasure in handing you our check No. _____ on the First National Bank, San Antonio, in settlement of below described items.

Statement attached.	75	91
Examined and approved Secy. Total		

Received payment in full for above items as stated

5347

Return check if incorrect

Voucher No. 5347

Department _____

Heusinger Hardware Co.
San Antonio Tex

Issued to

For Account of

Date

variations by numerous other houses) which appears to me to be the sine qua non of all forms. It is simple, contains absolutely all that is necessary for its full purpose, and not one unnecessary item. This voucher does away with a form for sending checks. If this feature is deemed undesirable, as it may be by some firms, the first part of the voucher could be easily changed to eliminate that feature.

It will be noticed that I have entered in the form "statement attached," but I have already explained how this may be changed to the various items paid if such change appears desirable. Form A is the face of the voucher, and form B shows the back of the voucher with the matter necessary for filing purposes. This voucher is of the proper size to be folded once, to about the size of an ordinary check, and form B is just the width of one fold.

It is entirely necessary, I think, to state the necessity for method and precision in any kind of a voucher system which may be adopted. At the time of payment the number of the voucher should precede the entry, which is carried to its proper column in the cash book, or separated as distributed

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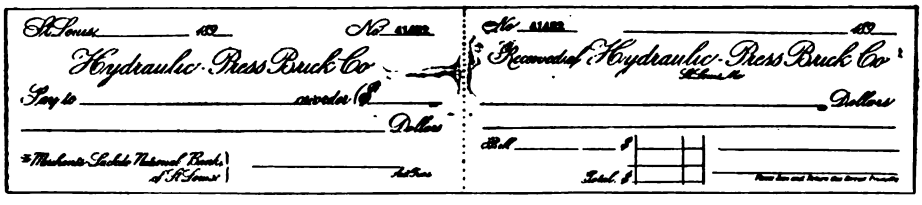
by the voucher; although it is unwise to separate cash credits too much by columnar work. Some book-keepers go to extremes in this direction. Every voucher should be checked as to its C. B. entry when returned and numerically filed. Your checkings will then show if any voucher should be delayed. Many corporations also have printed upon their vouchers the following, which is a good idea:

Alterations or erasures must not be made in this voucher. If not accepted as made, it must be returned for correction.

Before leaving this subject I wish to show and explain what appears to me the simplest and yet the most perfect voucher system which has come to my notice. I am enabled to reproduce it through the courtesy of the Hydraulic Press Brick Company, a corporation of $3,000,000 capital, with ramifications in almost every state in the Union. I reproduce it herewith considerably reduced in size.



Study it. Criticize it. Check with voucher attached. One piece of paper. Both bear the same number. Every check given must have ts accompanying voucher. The whole idea is business-like, simple, compl te and illustrative of the highest order of accounting.

In adapting the voucher system to your business study closely eve ry element therein. Select with judgment the form which is best suited to your needs, but avoid if possible (and it is possible) the shoal of redundancy; remember that hours of work saved is money in your pocket—or in your employers, and that the best book-keeping is that which tells every detail, with the least minutiae. Oft times the very simplicity of a statement makes it easy to comprehend and difficult to subvert. Thus you would find that the voucher system entailing the most labor is most likely to carry error instead of truth, and to conceal duplicity instead of communicating it.

C. A. SWEETLAND.

Voucher System in a Brick Making Business.

IN MY previous article regarding the various voucher systems, I mentioned incidentally a system now in use by the Hydraulic Press Brick Co., which I consider simpler and better than any other I had yet discovered. I have since been requested to give a fuller exposition of this system so that everyone can understand its complete workings and be prepared to utilize it if thought proper. To this end I have interviewed Mr. Geo. F. Baker, treasurer of the Hydraulic Press Brick Co., of this city, and from him have received the information here set forth.

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In a previous letter regarding voucher systems, I mentioned the unwieldiness of the voucher attached to a check as being against its usefulness, but to show me that I was in error upon this point Mr. Baker brought forth his check book, which is exactly the size of any other check book, running five checks to the page. At first he was at a loss to overcome this difficulty, but it was finally done by folding the voucher duplicate over and padding the check book a little to make up for the thickness of the extra leaves. When the checks are written these extra folded leaves are laid over to the right out of the way, and the checks are written before the voucher.

I will give the modus operandi from the beginning.

We will suppose that the monthly bills are to be checked up and paid. After being properly attested "correct" by the receiving clerks, they pass into the book-keeper's hands, and he checks them against the itemized statement and attaches them to the statement from the front. Turning the statement over he stamps it with a rubber stamp, for the distribution of the charges, thus:

DISTRIBUTION.
Mdse .....
Factory .....
Expense .....
Total .....

Of course this distribution may be divided and subdivided to suit the business. Below this is stamped:

This account paid by
Check No.....
Date .....

If there should be only one bill to be paid by check the matter above goes upon the back of **that bill.**

The greatest advantages of **handling invoices** in this manner is that they at no time leave the general office of the company. In many cases, especially where the departments of business are separated, often times in different cities, the attestation of an invoice is of relatively as much importance as the invoice itself. The proper place, there, for this invoice is at the general office where there is no opportunity for it to be lost or destroyed.

After these accounts have been audited correct by the book-keeper they go to the cashier for payment, and taking the markings upon the back of each invoice or statement as his guide, he makes checks for each item.

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The checks and statements audited can then go to a third party if necessary, who fills in the vouchers attached to the checks, from the statements and bills in hand. The checks may then be verified if desired by the signer from the papers above mentioned.

Of course, it is obvious that all of the above may be done by one person, but we are assuming now the use of this system in a business of some volume.

After the checks are ready, they are sent to the creditor, without a letter or remittance blank, which is unnecessary, thus a large amount of work is saved. Upon receipt the voucher is detached by the recipient and returned in an envelope sent for that purpose with the remittance. The check itself goes is wandering way, many times going through a number of banks before it is returned to the sender. It is, however, eventually returned; then as the receipts have been arranged numerically, and as they still form a part of the check which has been cashed, they are united back to back, and left to lie in their numerical order until wanted.

After the checks have been made out for the bills or statements the latter are filed away, not by month or date, but by the name of the creditor by means of the Shannon, or some other equally convenient file. The advantage of this is, that in the future, if any account or invoice should be called for, even if it was several years old, all of the bills would be found in the same filing section. If it is advisable for the purchases from any source for any year to be figured, all of the bills representing those purchases, are found together, and it is consequently a very short task to make the showing required.

In case a firm makes a claim that a certain bill or account is unpaid, it is the work of a moment, even for the office boy, to bring from the file in question the required bill. Upon its back will then be found the date of payment and the number of the check and voucher.

As these returned checks and vouchers are filed as before stated in juxtaposition, a reference to the check in question brings forth with it a receipt for the account in question, and it is forever settled.

The advantage of this simple plan for auditing work will be seen even without the necessity of any explanation. . It is so simple that none of its workings can be hidden, providing all payments be made by check.

You may say that all payments cannot be made by check in the line of a general business, but in answer I will show you that they can. Wages may vouched for by the person who pays them. Salaries by the cashier. Petty cash may be easily handled in this manner. A stipulated account may be checked out, vouchered by the cashier, and charged if you please to petty cash. We will say that $200 is thus charged to start this ball. Now during the month the cashier pays such things as may come like postage, express, janitor service and odds and ends for which a personal receipt of the receiver is considered unnecessary. His expenses from this fund may be during the month, $136.72. He makes a check for that amount and signs the accompanying voucher; while his statement of the items of account after being O. K'd by his superior is filed like any other invoice. You will see that the drawing of this check restores the petty cash account to its equilibrium, leaving both voucher and receipt where they properly belong.

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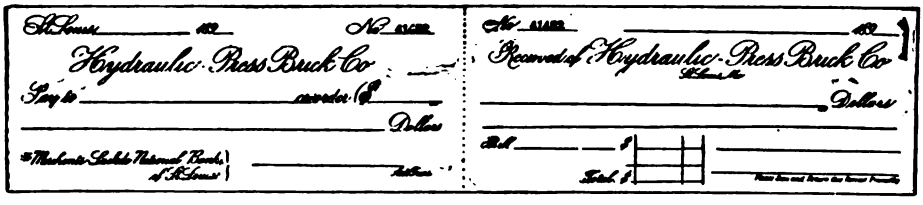
In the matter of the return of the receipt accompanying the check the Hydraulic Press Brick Company assure me that in the last five years that they have used the system, there have been few occasions to ask for the return of the receipt and that not one is missing.

In order to handle this system in a perfect manner, every cent that is received in a business should be deposited and every cent that is used in the conduct of that business in any of its departments should be checked out. In order that you may form a more comprehensive idea of this system than perhaps this explanation may give you we will herewith reproduce the check, with accompanying voucher, used by the company above mentioned.



Cash book entries should be made from these checks or stubs, and be preceded by the number of the check. If columnar cash book is used for distribution no further posting is necessary or expedient until the close of the month.

C. A. SWEETLAND.

The Voucher System in a Manufacturing Business.

I HAVE been running a set of books under the voucher system for several years, and thought possibly an outline of my method of recording might be of interest.

As Mr. Sweetland in his articles does not touch on any manner of recording, I will, as well as I can, explain our method. We use what Mr. Sweetland terms the third class voucher, viz.: that of attaching the invoice to voucher in the place of transcribing the items of invoice to voucher, except in cases where there is no invoice, in which case record of items is entered on voucher. We pay all vouchers by check, although the cash account may be used also if desired, I attach a copy of our voucher, also a leaf from our record book which we term "Supply Register," it will be seen that the columns of the supply register conform to the distribution of the back of the voucher. The voucher and leaf of the supply register are self-explanatory when compared with the examples below.

The voucher is always recorded before mailing, and generally before issuing a check for payment of same, although the number and date of check should be entered in supply register before mailing, then we have a full and complete record of the whole transaction, and in case the voucher is lost we may make a duplicate. The supply register has a grand total column to

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which we carry the total amount of voucher, each department having a total column, the footings of all of which should equal the grand total column; each department may have as many item columns as the nature of the business requires. There may also be as many departments as desired. At the end of each month we foot up the columns and carry the amounts of the total columns of each department to Journal, thus, for example:
"March 31, 1900.

Production department $426 52
Maintenance of plant..... 134 63
Real estate and improvements..... 551 65
To accounts payable.....$1,112 80"

Supposing all of the above were paid by checks on Indiana National Bank, we refer to stubs of check book, taking all checks that were drawn to pay vouchers during the month of March (these being designated by marking each stub of check that was drawn to pay a voucher thus "Voucher"), we find that the total amounts to $1,112.80, and enter in Journal thus, example:

"March 31, 1900.

Accounts payable $1,112 80
To Indiana National Bank.....$1,112 80"
Vouchers paid in March, 1900.

This balances Accounts Payable and gives bank proper credit.

If desired, the footings of all the columns may be carried forward from one month to another, and at the end of the year we have totals paid for all the different supplies for the year. Any particular transaction may be referred to by looking it up in the supply register and finding the number of the voucher, the vouchers may be filed in cases or in bundles, one month's

ACCOUNTS PAYABLE

JOHN JONES & CO.

To Sam'l Small & Co. DR.

Address New York

1900

Mch	4	As per Invoice attatched				426	52	
"	10	" " " "				134	63	
	18	" " " "				551	65	
					1	112	80	

Received (place) New York (date) Mch 24 1900
of JOHN JONES & CO.
Eleven Hundred Twelve 80/100 Dollars.
being the amount in full of above account
(Sign here with ink) Sam'l Small & Co.
☞ And return to: John Jones & Co,

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March. 1900
ACCOUNTS PAYABLE

JOHN JONES & Co.,
DETROIT MICH.

Voucher No. 42
Amount $1112.80
Favor of Saml. Small & Co.
Address New York

The within account correct
John Jones Secretary

REGISTERED IN
Supply Register
THE SECRETARYS OFFICE

PAID BY CHECK
No. 74 IN B.K.
Mch 24 1900

DISTRIBUTION OF SUPPLIES

PRODUCTION DEP'T.	
Timber	100 00
Oil	48 00
Printing & Stationery	94 00
Labor	
Waste Packing etc.	71 00
Incidentals	113 52
MAINTENANCE OF PLANT	
For Repairing Buildings	44 00
" " " Machinery	21 00
" " " and Tools	14 00
" Feed, Shoeing etc.	55 03
REAL ESTATE AND IMPROVEMENTS	
Land	
Buildings	110 00
Machinery	140 00
Tools	91 00
Office Furniture and Fixtures	210 65
GENERAL	

work in a bundle. If I were to choose from the three classes of vouchers mentioned by Mr. Sweetland I would surely choose the third class in preference to any of the others for the following reasons, viz.: 1st, the saving of time in making vouchers; 2nd, the original invoice must be accepted as correct, in transcribing we are, to a certain extent, liable to make errors; 3rd,

SUPPLIES FOR MONTH OF

Date	Voucher No	Name	Total Amount	Production Department: Timber	Oil	Printing & Stationery	Labor	Waste Packing etc	Incidentals	Amount
Mch 24	42	Saml. Small & Co.	1112 80	100 00	48 00	94 00		71 00	113 52	428 52
			1112 80	100 00	48 00	94 00		71 00	113 52	428 52

MARCH, 1900

Maintenance of Plant: Repairing Buildgs	Repairing Machy	Repairing Tools etc	Feed Shoeing etc	Amount	Real Estate and Improvements: Land	Bldgs	Machy	Tools	Office Furn & Fixtures	Amnt	When and how paid
44 00	21 00	14 00	55 03	134 03		110 00	140 00	91 00	210 65	551 65	Mch 24 1900 CK 74 IN BK
44 00	21 00	14 00	55 03	134 03		110 00	140 00	91 00	210 65	551 65	

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as the number and date of check is recorded in supply register as well as on the voucher, the check forms a receipt of the best kind, aside from the voucher itself, therefore if the voucher should be destroyed the check and record of voucher forms a very good receipt, or at least good proof that the account has been paid.

A. F. JOHNSON.

The Voucher System in a Hardware Business.

I DO not know that the following procedure is not the usual one followed by those making use of the voucher system, but submit it in case it may be found useful to some readers. Invoices, having been received, checked, approved, and entered in an abstract journal properly ruled for such purpose, and the journal folio note dthereon, are filed away in proper file cases in order of date of payment.

As each date of payment arrives, the invoices due to be paid on that date are taken from the file case and vouchers drawn.

No._____ **CONTINENTAL HARDWARE CO.**
EVERETT, WASH.

To Chicago Wire Co., Dr.

Address Chicago, Ill.

1899

Dec	2	By mdse per. att. bill	201	00		
	7	" do	168			
	28	" do	303		$672	50

Correct_____ Approved_____ Treas

Received_____ 1899 of Continental Hardware Co.

the sum of Six hundred and seventy two 50/100 Dollars

in full payment of above statement_____

(Please date, sign and return)

VOUCHER

CONTINENTAL HARDWARE CO.
No 1878 $672.50

Name Chicago Wire Co.
Address Chicago, Ill.

Dated Dec. 31 1899
Entered Dec. 31 1899
Cash Book Folio 367

DISTRIBUTION

Chicago Wire Co.	$672	50

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The vouchers are numbered consecutively, which numbers are entered in the cash book in a special column between the dates and the ledger folios.

The vouchers when returned, signed by the creditor, are filed in numerical order, and an index made of the names and principal items of purchase, thereby enabling one to immediately refer to all the vouchers issued to any one person or firm, and, also, to ascertain readily the cost of any article purchased at any particular date, or the name of the firm handling such an article.

It is very convenient for the auditor, in this system, if the numbers on the checks and vouchers correspond, in order to afford a ready reference between check and voucher. Where business is done with but one bank, this is easily done.

I attach a convenient form for vouchers. L. S. DURYEA.

The Voucher System in a Wholesale Business.

I wish to outline the system I have in use and which I believe to be the best system in existence. The accompanying forms show both sides of the voucher (which should be the same size as checks used, and not too wide to go in a medium size envelope without folding) properly filled out.

SIGN AND RETURN PROMPTLY

_____ 189__

Received from D. W. Alderman & Sons' Co.,

_____ *Dollars,*

in settlement of account as per statement on other side.

$_____. _____

No.___

PAY STATEMENT.

Akron, O. _____ 189__

M _____

_____

In account with

D. W. Alderman & Sons' Co.

SEE OTHER SIDE.

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Invoices are first entered in date order on a columnar purchase journal, then the amounts are transferred to the pay statement or voucher in the same order and check attached for total amount of invoices, less cash discount, if any of the invoices are subject to cash discount. These checks are disbursed on credit side of cash book and in the memorandum column, the date only of the invoices paid is shown, these being checked against purchase journal an dfolios being made properly, using red ink, following one to the other. There is a voucher number column at extreme right of credit side of cash book, and when these vouchers are signed and returned they should be given corresponding number with the disbursement entry and filed away in numerical order, so any voucher can be found when wanted. It sometimes happens that these vouchers are not signed and returned, and, in this case, the canceled checks received from bank would take the voucher number and be filed away in order with vouchers. The voucher shows date, amount, etc., of each invoice paid, which is all that is necessary, and by keeping invoices properly filed by name, in cases, they can easily be found and referred to without trouble.

N. M. WATKINS.

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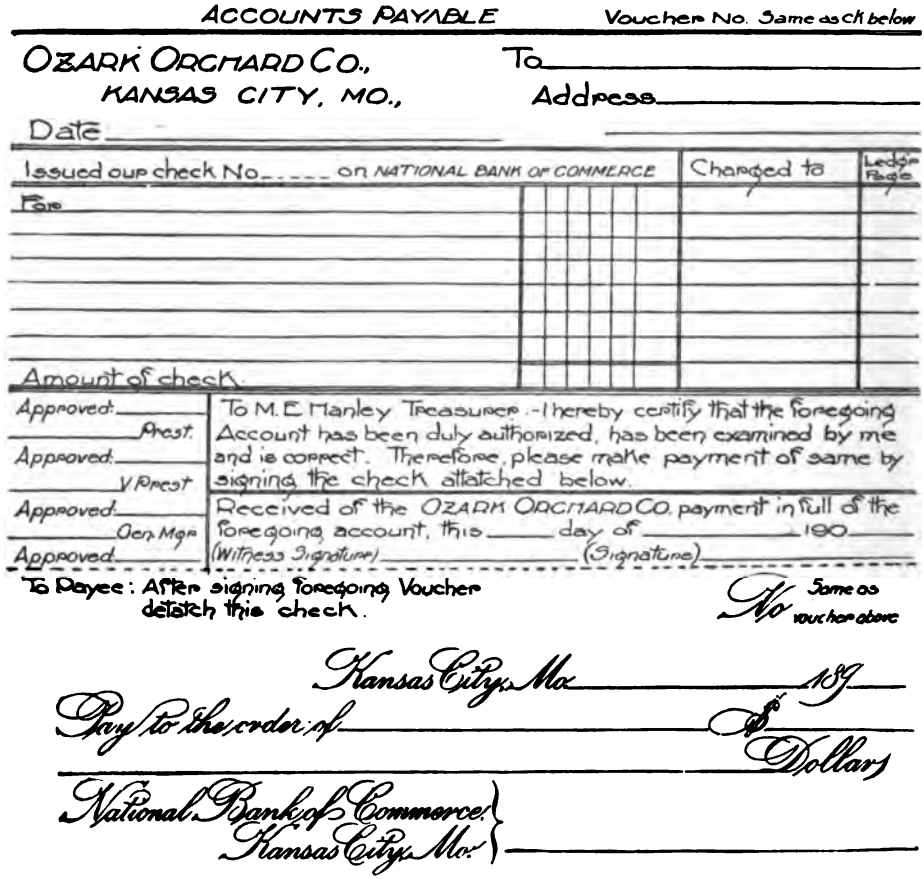
The Voucher System in a Fruit Growing Business.

I submit herewith a form for a check voucher that embodies many valuable features, the result of several years' experience as Auditor of the Ozark Orchard Co. It has been prepared in a manner so that anyone can obtain from the face of the voucher all information concerning the transactions of which it is a record, and this is a matter of great convenience when examining accounts of great length. By using this form of voucher, an



ACCOUNTS PAYABLE — Voucher No. Same as ck below

OZARK ORCHARD CO., KANSAS CITY, MO.,

To _____

Address _____

Date _____

Issued our check No. ____ on NATIONAL BANK OF COMMERCE		Charged to	Ledger Page
For			
Amount of check			

Approved: _____ Pres't.
Approved: _____ V. Pres't
Approved: _____ Gen. Mgr.
Approved: _____

To M. E. Manley Treasurer.-I hereby certify that the foregoing Account has been duly authorized, has been examined by me and is correct. Therefore, please make payment of same by signing the check attached below.

Received of the OZARK ORCHARD CO. payment in full of the foregoing account, this _____ day of _____ 190__

(Witness Signature) _____ (Signature) _____

To Payee: After signing foregoing Voucher detatch this check.

No Same as voucher above

Kansas City, Mo. _____ 19__

Pay to the order of _____ $ _____ Dollars

National Bank of Commerce, Kansas City, Mo. _____

office boy can take the Ledger, and, without asking questions, get all vouchers, and, at the same time, all checks used in making payments, thus presenting in perfect form, all the facts so useful in adjusting disputed accounts.

Should you desire it, I will submit another form that I have prepared. I hope that the form enclosed herein may be interesting to members of my profession.

E. M. SMITH.

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An Accountants' Voucher Record.

WHEN the voucher system first came into use, the voucher record was a book of reasonable size and with a comparatively small number of columns. As the advantages of the system came to be more generally understood and appreciated, the record gradually expanded, until now it has, in some instance, grown beyond manageable proportions. Advantageous divisions and subdivisions of an account are sometimes omitted in order to prevent the record from becoming unwieldy. The short form of voucher record here shown is intended to be used in connection either with a voucher ledger or with voucher accounts opened in the regular ledger.

A SHORT VOUCHER RECORD

Date	Voucher No.	To whom issued	For what issued	Principal Account	Subordinate Account	Ledger Folio	Distribution of voucher	Total of voucher	When paid	How paid
Jan 6	123	X. Lumber Co.	Lumber	Manfg.	Materials	678	1,745.18	1,745.18	May 23	Ch. 45
8	124	Cashier	Pay Roll	Manfg.	Labor	345	543.56			
				Office	Clerks	432	359.78			
				Office	Exec't.	200	200.25	1,100.50	Jan. 8	" 12
12	125	Y. Ptg. Co.	Printing	Office	Supplies	324	25.00			
				Selling	Circulars	435	126.78	151.78	23	" 17
24	126	Cashier	R.R. Tick't.	Selling	Trav. Ex.	456	20.00	20.	24	" 18
26	127	Z. Adv. Co.	Advts.	Selling	Advert.	555	345.78	345.78	26	" 19
		Total					3,372.31	3,372.31		

In a certain business, for example, the accounts are classified under three general heads, office, manufacturing and selling. These principal accounts are subdivided into materials, labor, supplies, and so on. The ledger headings follow the sub-divisions. Thus the ledger will be headed, "manufacturing account, materials," "manufacturing account, labor," "office account, supplies," and so on. The column in the short voucher form headed "distribution of voucher" shows the amount to be posted, and the column headed "subordinate account" shows the ledger account to which the posting is to be made. This short form of voucher record admits of an indefinite division and subdivision of the accounts without enlarging the size of the record. The disadvantage attending its use lies in the fact that the several amounts have to be posted separately instead of in totals. On the other hand, the ledger accounts will show the way each item is running and will also admit of explanatory notes being made in the remark column of the ledger.

JOHN H. BLACKLOCK.

A General Voucher Form.

The following will describe the voucher used in our business. The face of same is ruled off for Date, Amount, Discount, Deductions or Rebates, and Total Column. There is also room for other columns should same be necessary. This form, of course, involves only the writing of gross amounts of each bill. The Deduction column can be used for whatever deductions

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have been made on original invoice for mistakes, overcharges short on order, etc., the same in detail being written on the invoice and not in voucher. On the reverse side the voucher has the headings for the accounts as there are in the Ledger. This form can be made to fit any business, as they can be as many subdivisions made as deemed necessary. The voucher number can be taken from the check number, so that in case of its non-return the check can be filed in its stead. Where a cash book is used with special columns for accounts payable and expense, then this voucher is really a transcript of same, and can be easily checked off in case of error, and where an account is to be looked up, for payments made. The voucher is made to fold over the invoices and is easily filed with them. In case there should be a number of single bills paid, each with its own voucher, and these bills are all for machinery account for instance, then the separate vouchers can in their turn be placed in one voucher and filed away as one, as for example:

Voucher	No.	10875.	J. Smith & Co.,	Machinery	acct...$432.54
"	"	10897.	S. Brown....	"	" 332.45
"	"	11000.	J. White.....	"	" 223.67
"	"	11001.	B. Black & Co.	"	" 554.89

And the single voucher to cover these four would read:

Vouchers Nos. 10875. Paid (date on seperate vouchers need
97. not be repeated.)
11000.
1.

Paid to..... Names on separate vouchers need not be repeated.

Machinery acct.....$1,543.55

LEON JOSEPH.

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Illustration of Combined Voucher and Check.

1185 Voucher Audit No. 1386

NATIONAL STEEL AND WIRE COMPANY

To The George N. Pierce Co.

Month of January 1899 Adrian Mich

1898			
Nov.	26	For the following duly authorized account, which is hereby approved, per detailed bills on file	176.00

DISTRIBUTION

ACCOUNT	AMOUNT
Stationery	176 00

Correct J. Smith. Approved: L. Jones Auditor

Received January 15 1899 from NATIONAL STEEL AND WIRE COMPANY, the sum of One hundred and seventy six 30/100 in full payment of the above account:

The George N. Pierce Co.

$176 22 J.W. Beeman Secy.

NOTE, if amount is not satisfactory, return voucher without alteration for correction.

No. 1185

The George N Pierce Co.

Adrian, Mich.

Ledger D

Folio 124 Amount $176 22

This Voucher when properly receipted will be accepted as a draft on the NATIONAL STEEL AND WIRE COMPANY, through the FIRST NATIONAL BANK of Cleveland O.

Revenue Stamp

National Steel & Wire Co.

Cleveland O.

Voucher Record for Publishing Business.

The Book-Keeper Publishing Co, Ltd VOUCHER RECORD

Date	Voucher No.	Names	Reference		Disc.	Total	The Book-Keeper Subscriptions	The Book-Keeper Exchanges	Portland Review Subscriptions	Portland Review Exchanges	Home Study	The Addisonian Subscriptions	The Addisonian Miscellaneous	Books	Printing Paper	Publishing	Check No.	Remarks

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Principles of Distribution in the Voucher System of Accounts.

THERE is scarcely any line of book-keeping in which one does not at all times run across the very interesting question as to what account this or that item shall be made a charge, and the answer to the question, taken through a series of fiscal periods, as shown by the entries themselves, is quite a clear exposition of the principles upon which the company accounting is carried on.

In some respects it is unfortunate that such a marked variation of circumstances, etc., prevails in even the accounts of companies of the same class; and so it is almost impossible to prescribe any precise methods of ruling, any accounting formula by which the items of an extensive bill with many charges shall be assigned to debits which will prove at all uniform in subsequent periods; debits of such a nature, that is to say, that any subsequent items in various classes of bills, can be reasonably inferred, even in the majority of cases, to be a charge against the same account as those at first occurring. It is in fact this very circumstance which makes the employment of a carefully prepared, well itemized voucher folder of so much value, both to those interested in the business and to the auditor as well, giving, as it will, if properly used, a clear and explicit statement of the special distribution of the enclosed bill or aggregate of bills; and if a folder is prepared in such a manner that there will be nearly half an inch between the lines of the folder, space will thus be left for the auditor to note in red ink, perhaps, his own method of distribution of the different disbursements which, to his practiced eye, seem to have been originally incorrectly awarded to this, that, or the other account on the books passing in review.

In few companies, unless we include building and loan associations. is there the slightest attempt to regulate the methods of distributing the expense accounts, by charter or by-laws; although in municipal accounts we come very close to the by-law regulations as to the distributive principles to be employed through the ordinance book, which is strictly an exemplification of continually changing and enlarging corporation by-laws; and prescribing as it does, the uses to which the allotments of the general fund shall be put, it distributes, many times in advance of the receipts, the revenue of the corporation along the line of accounting principles which are governed by the exigencies of the cases brought before the councils, and the face of the vouchers themselves will have to corroborate in each case, the special distribution of the funds which is illustrated in the payments for sewer, paving, lighting and other purposes.

But in ordinary undertakings there cannot possibly be any regulation of the disbursements of the income either in advance or at other times, owing to the unforeseen character of the company disbursements connected with the operating expense account, and which in the case of the municipality is usually quite closely approximated in advance through the comptroller's estimates at the beginning of the fiscal period. Perhaps the most valuable difference between these two lines of companies, the factory and the city

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accounts, lies in the simple statement that the latter is not in any real sense a corporation "for profit" while the other is such in every sense of the term.

It is a well known fact that labor charges, for example, incurred in the building account, do not always render it more valuable as a company asset, and for that reason should be excluded from an appearance thereunder. Whenever lumber is purchased and men are set to work to adapt it to its place in the factory structures, for some new purpose, then we have what constitutes a charge against the building account; but when the labor is employed without the auxiliary of new building material, then it forms a charge, not against one of the visible assets of the company, but against a repair and renewal account, which is not of the nature of an addition or improvement to the structure, but only a maintenance thereof.

Manufacturing companies usually make a marked difference between the building and improvement accounts, relegating to the latter heading such items as the construction of new walks, fences, partitions, railings for offices, etc., stairways, removal of some old construction and substituting new therefor.

And they proceed upon the principle that whatever representative account the varied items may appear under at first, a sharp distinction must be maintained up to the close of the fiscal year; and then, when the different classes of maintenance, improvement and renewal costs have been properly distributed, their relative place in the entire system of accounts, and their relation to the main, the building account, can be very readily ascertained, and amalgamated with it, closing into it one by one, the various sectional departments, with their footings, subject to such changes as the management may wish, and thus preserving distinct, not only through one fiscal year, but up to close of the undertaking, the history of the sectionalized charges in a clear and comprehensive manner.

In the correlative ledger heading in railway accounts (the construction account) we find even interest and discount items made a charge against it; where they are paid out on loans negotiated for that special purpose; and sometimes even certain portions of the law charges are placed against it also.

In the factory accounts, it is necessary to keep very carefully in mind the difference between footings of any representative account like the building account, which is the substitute for the railway term "construction," and footings of accounts which stand for added cost merely and not for added value; for cost does not always mean value as has been shown frequently in recent years, when sudden insolvency assailed an undertaking.

In oil accounts, the sum of the charges against any particular well or group of wells is very rarely indeed made the basis of a sale. It is the production alone which is the governing factor; and the sum of the amounts standing against the lease construction, against the undertaking as a whole, is conveniently placed in the background, its results reserved only for the interested consideration of the retiring partners.

Now the arrangement of the voucher system and record in oil accounts has two distinct aims; first, to obtain therefrom the exact cost of any one well at any time, and second, the varied classes of costs common to all the wells, but so arranged that the cost for the original purchase of the property, drilling, tanks, labor, law, traveling, etc., can be also ascertained by themselves separately.

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This distinctive result can be reached easily enough by one method, keeping a separate sheet for each well of a lease, whatever their number may be, and then in order to reach the total cost for a given lease, or group of leases, simply carry forward the footing of each distributive column on the various pages, into an aggregation sheet to represent the cost (not value) of the total undertaking. When we come, however, to apply this idea to factory accounts, it will be needful to bear in mind the fact that there is a great difference between the current operating expenses and the cost or expense of any single machine, or adventure which may form a part of the entire factory system of accounts.

There are in factory accounts two distinct methods of charging labor; one to the job account, and one to the current operation account, so far as its items fall outside of the charges which can be shown to be debits against any particular jobs on hand. Any attempts to reach the cost of a single machine or of a group of articles made, must be carried out through the auxiliary of special statistical sheets as a rule in which can be incorporated from the ordinary record books of the company, the isolated charges taken seratim, which will give the desired information.

It is only where the number of machines is limited that their cost up to date can be shown and carried into the regular factory accounts from day to day, as for instance, where the equipment consisted of six machines of a certain kind, of different sizes for turning out different sizes of the same class of products, and the rest of the equipment consisted of the ordinary belting, shafting, pulleys, engines, boilers, etc.—the distribution of costs was made through a specially prepared voucher, dividing the charges into two distinct classes—one of the six machines, the other for the rest of the equipment in a single lump; that is, the printing form on the folder ran as follows: Voucher number, amount, net (third line being reserved for indicating the net amount paid in distinction from the gross amount entered upon the line above, since there were always several deductions from the face of the original bill on account of freights, two per cent off, rebates, breakages, claims of various kinds, etc.), paid (this line giving the date of payment), by (this line giving check number, or the word "note" if paid by that means, or else the name of one of the firm who might have settled the bill himself), charge (following this word came the distribution of six lines for the machines, and eight lines for the items belonging to current operation costs, such as labor and wages, freights, interest and discount, rebates, oil, fuel, wire and nails, etc.). And finally ent. (that is entered), meaning the folio of cash book, journal, etc., on which the figures were found which were placed on the folder.

In all cases where the carriage costs and the supply bills are so numerous as they are likely to be in factory accounts, oil accounts, etc., the use of an itemizing slip ruled up by the printer for the purpose, is advisable, and on which can be placed the items picked out from the great array of figures on the consecutive pages of the periodical bills, freight and supply, the items one by one being marked in red ink or pencil with the initial of the account to which they should be charged, first; and then the items taken one by one and recopied on distribution slip pasted to the original bills as a proof sheet or slip.

The divison of the costs and its skillful distribution is carried out in

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the most remarkable manner in railway accounting, where the cost of a single car, or engine, or other item of equipment is carefully preserved, in connection with the operating expenses, through the aid of the loose leaf system of accounting, as shown by the use of train sheets, cost sheets, freight income sheets, and so on, the tissue and other forms of record sheets being so numbered, dated and filed, in different colors and sizes that the well nigh countless items of expense can be easily aggregated into comprehensive summaries, balance sheets and statistical tables at short notice. The chief clerk of a large railway company will readily appreciate the wonderful skill with which the footings of any and all of these apparently isolated, but really closely connected accounting departments of the road, can be quickly carried down and forward into summary sheets, and the totals prepared, simply from the proper sectionalizing of the enormous number of items representing the operation expense as a whole.

A question came up not long since in a Pennsylvania factory as to the representation of the insurance account which well illustrates the advantages of distributing expenses carefully. A certain class of machines maintained as a new venture, was charged with labor, material costs, repairs, a pro rata of all taxes, insurance carriage, salary and similar costs, and the insurance as fast as it ran out, was not closed into profit and loss but retained in the venture account, as a part of the actual maintenance costs, while the general insurance account was carried on the general ledger. But since part of the charges against this account were kept under the new venture account, they could not be written off in the general books on the cancellation or expiration of the policies without creating confusion in the accounts; so that the attempt to represent the running out of the insurance premiums was actually abandoned, and at the end of each three months a new insurance inventory taken, and if it was large enouge to equal the amount of the items charged in the general ledger, that amount was retained; if too large, enough was written off to profit and loss on the general account to make up the difference and reduce the general insurance account to its proper standing. This method is simply given as it was found to exist without comment.

In auditing, one of the first tasks is to ascertain, as well as possible, the general principles on which the distributive processes have been carried out, and if any apparent discrepancies occur, to see on what principles the discrepancies themselves arose; if any sudden changes are found in the distribution scheme, to see if there is any cause for the same, made necessary either by the previous inaccuracy of the accounting system, or some marked change in the management of the business itself, for both of these features are possible factors for such changes.

And the great underlying principle of all distribution schemes is that not only the constitutent items of cost can be easily reached through an inspection of the columnar divisions of the record books, but also that their columnar division itself shall be such as to enable comprehensive results to be quickly and intelligently obtained within a reasonable time. Upon these two principles hang all the law and the prophets of any system of distribution.

P. H. Grover.

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Advantages and Disadvantages of the Voucher System.

THE voucher system can be divided into three classes, each of which has its adherents. First, I will consider the system embodying the voucher and check in the same document, which is used by many of the larger corporations, especially the railroad companies. The principal advantage of this system is the fact that upon the return of the voucher check the sender has in one document a record of the goods purchased, the time of purchase, the time of payment, and a receipt for the same. The uniformity of size renders filing easy, and the consecutive numbering (copies of which appear at the proper entry in the cash book) facilitates the checking by auditors.

The disadvantages of this system to the sender are: First, the additional labor required to transcribe the bills upon the voucher, the additional opportunity for error from this work; and if the bills are not thus transcribed, the voucher itself is of no more benefit than an ordinary check. This item of labor must amount to a considerable sum, where the transactions are many.

Second, there is no ready record as is the case with check stubs, and the record of the account with the bank must be also separately kept. In some large offices where the cash book is in constant demand the posting of cash debits, paid by check, are made direct from the stubs themselves.

Third, where there is a mistake made in the voucher, it causes, frequently much confusion, as the cash entry has already been made, and while the voucher must of necessity be returned, being incorrect, and being itself a receipt in full for the account, the issuance of a new voucher for the proper amount would vitiate the cash entry, and also the credit to the bank; and the return of this one, with the issuing of an additional voucher, should this one be short in payment for the difference, carries with it no evidence of authenticity; as it must be issued to correct an error. The main disadvantage to the recipient of such a voucher check is that it is usually sent without an inclosure slip, and no corroborative record of its receipt can be kept, a very desirable thing in all records of cash receipts. Second, where the cashier and treasurer (receiving) are separated, the original document must remain in the cashier's hands until it is checked correct, and entered. If this was the only check received it would not take long, but it is frequently only one of hundreds. Of course, this disadvantage could be easily obviated by the sender using a simple remittance slip, merely stating the name of the sender and the amount of the voucher. Some of the larger corporations are now doing this.

The second class of vouchers used are similar to the voucher-check in all particulars, except that they are accompanied by a check, for the amount and are not considered a check or draft in themselves.

The principal disadvantage of this system to the sender is the large amount of time required to transcribe entire the item of bills purchased upon the voucher. This in large firms or corporations requires the services of many extra clerks, and is never placed upon the book-keeper. It is really

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unnecessary labor, as the items with the proper checking of receipt, correctness as to practice and quality, as well as extensions and footings, should all be found upon the original invoice, and wherever this voucher system is used; the entire labor of the different creditors' bill clerks, must be duplicated upon the vouchers. Then these vouchers must be carefully compared with the originals, to avoid error.

The objections mentioned in third paragraph of the voucher-check system are also applicable to this system. Of course not to the extent of disturbing the equilibrium of the bank account, but as far as its other effects reach.

There is no question of the advantage of having all receipts of a similar size and appearance, and consecutively numbered; as by this means the labor of tabulating or checking is reduced to a minimum; but still, wherever there exists a necessity for additional entries, either upon vouchers or in records, there also exists additional opportunities for error.

The third class of vouchers I will mention is that where the voucher itself does not itemize the account, but is issued for a stipulated amount to pay for bills thereunto attached. The various bills for which the voucher vouches are attached to it, and thereafter form a part of it.

This system minimizes the labor, and brings an additional feature of accuracy to bear upon it, viz., the actual invoices of the creditor which commends it above either of the others, where it becomes necessary to use this system to facilitate checking, and to avoid payments of monies for which there has been no value received. Both of the other classes of vouchers may be juggled, and it would require the corroborative evidence of the original bills, to be absolutely certain of their exactitude and accuracy.

Even this system has been beaten. One case to my knowledge involving several thousand dollars, was discovered by an expert, by close investigation. Everything seemed perfectly regular, but after much investigation, it was found that the cashier had used invoices several years old, erasing and bringing the dates up to the present. The voucher was then made with bill attached, in due form, charged out and the cash pocketed by the dishonest employe. Of course, had all payments been made by check this method could not have been so successfully used. Even in this case it was finally discovered.

The great disadvantage of this system is that it becomes cumbersome to file voucher and bills together, especially whenever there is a great number of bills paid in one voucher. It also costs additional postage to the sender and the receiver. Of course, when there is but one bill or perhaps two, it does not appear so disadvantageous, but whenever the purchases of the month mount into the hundreds of dollars, and perhaps as many invoices it becomes a matter of serious discomfort.

Next, and by no means least in importance, is the fact that the invoices for goods purchased should by all means be kept separate from the receipts for payment to facilitate ready reference which is so often required in any business house to ascertain prices paid at a given time, or quantity or quality of goods purchased. Where all of these bills have been carried into the permanent receipt files, and their identity lost, except as a receipt for payment of account, it becomes, if not an impossibility, a very irksome task to seek for invoice should it be required.

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Some of the railroad companies and perhaps other corporations combine the first and third styles of vouchers. The Wabash railroad, for instance, issues a voucher (in duplicate) for each bill. One of these is sent to the creditor, with this endorsement: "This voucher when properly receipted, becomes a sight draft upon John Doe, Treasurer. Payable through Clearing House." Just imagine, two of these vouchers for each bill; the original with bill attached is filed in its proper place in the office of the company. The one with bill attached being called the original, how does the duplicate voucher (so called) differ from a check? In a great corporation like the Wabash railroad what an immense volume of seemingly useless work is made for some one. Of course, it may be argued that all of this "red tape" gives employment to just so many more clerks and book-keepers, and while this is true it does not follow that, because it has this very salutary effect, it is an example of the best book-keeping.

When we are studying a system to gain an idea of its advantages and defects and how its application may be made to improve its science of book-keeping, it will not do to lose sight of the fact, at all times, that the best book-keeping in the world is that which gives all of the desired results with the least amount of labor and the fewest number of entries. Book-keeping may be theoretically correct and still four times as many entries made as are actually needed. A better book-keeper taking charge of such a set of books, will have them just as accurate in every particular, and will not spend one-half of the time of his predecessor or use one-half of the space.

In carefully comparing the various systems, it seems that an even better one than any I have mentioned could be evolved. It would be a simple receipt in itself, but would be consecutively numbered, and treated exactly at the papers used in the voucher systems now used are; being of a uniform and proper size to fit your receipt files; the number being placed opposite the entry on the credit side of your cash book; then, when this voucher is returned, all of them could be numerically filed for instant reference. If thought of advantage the file number of the voucher could be placed upon each invoice covered by said voucher with blue pencil. The form might be very simple and still carry with it all of the advantages of the more voluminous plans, with but very little labor added to the plan which now uses no voucher.

Why should not such a voucher answer all of the requirements of the voucher system, and still be simple, cheap, requiring but little extra time and labor and necessitating no extra expense? I think it would prove in every way as efficacious as its more cumbersome brother. C .A. SWEETLAND.

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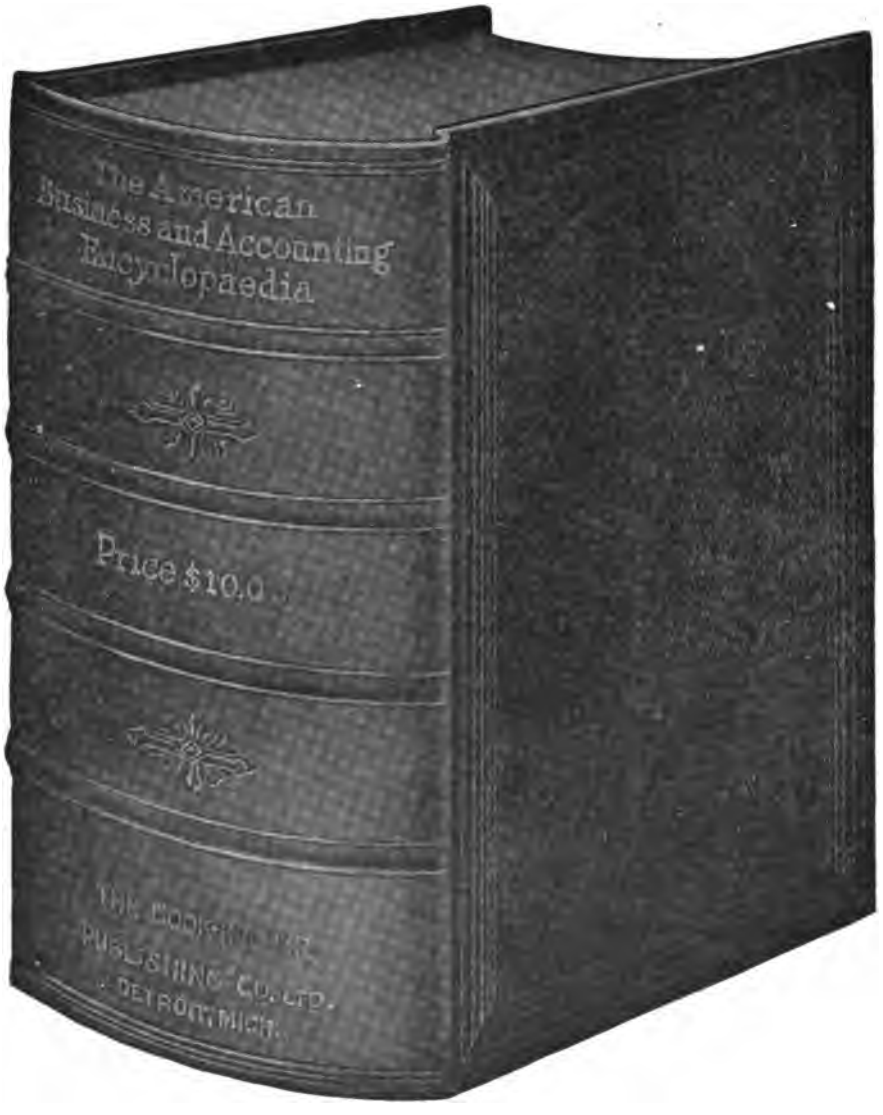

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